Monthly and Seasonal Mean Analyses

September, October, November 1989

METEOROLOGICAL OFFICE

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Monthly and Seasonal Mean Analyses

September, October, November 1989

Mean fields obtained from the archive of operational analyses

Met O 20 (Dynamical Climatology Branch)
Meteorological Office
London Road
Bracknell
Berkshire RG12 2SZ

November 1989

Note: Permission to quote from this document should be obtained from the Assistant Director of the above Meteorological Branch.

Monthly and Seasonal Mean Analyses

Introduction

The archive of operational analyses contains a continuous record of global analyses every 12 hours (00 and 12 GMT) from May 1983 onwards. They are copies of the update analyses produced in the operational numerical weather prediction system using the 15-level model (Bell and Dickinson 1987). In this booklet there are presented monthly and seasonal mean fields computed from the archived analyses for a single season. Since a season spans three calendar months, there are four sections. Sections 1, 2 and 3 contain charts of the monthly mean fields for each month, and section 4 contains charts of the seasonal mean fields. The seasonal means are the means of the fields in the first three sections, weighted according to the number of days in each month.

Each section contains a set of charts for the northern and southern hemispheres and a set for the tropics. In each hemisphere, polar stereographic projects have been used to prepare a chart of pressure at mean sea level and composite charts showing both height (contours) and wind (vectors and isotachs) at 850, 500, 250 and 100 mb. In the tropics the charts are presented on a latitude—longitude projection encircling the globe in three sections covering the longitudes 0°—120°E, 120°E—120°W and 120°W—0°. This projection has been used to produce a series of charts of wind vectors and isotachs at 850 and 250 mb. On all charts, contours are depicted as solid lines, wind vectors as arrows and isotachs as dashed lines.

When archiving was first undertaken, for May 1983, global fields were stored according to their coefficients in a series of spherical harmonics up to a triangular truncation of T40 (Swinbank 1984). Since this is roughly equivalent to a latitude—longitude grid with a resolution of 4.5° by 4.5°, the conversion from the model's standard grid of 1.5° by 1.875° to the spectral representation results in some smoothing of the fields. Subsequently, a new method for storing the archived fields was developed as a result of discussions within the Working Group on the Development of the Operational Suite (WGDOS). This method uses a compressed digital coding of the original model field, on its standard latitude—longitude grid, but with fewer significant figures (Lowther 1986). It was implemented on 18 December 1985 in a limited version. After the inclusion of more fields, and following monitoring to ensure that the two representations (i.e. truncated spectral and compressed grid-point) of the archived analyses were consistent, the spectral archive was terminated on 31 October 1986.

The contents of the archives may be examined by consulting the computer data set 'M20.NARCHIND', where the tape number, file number and data set name for each archived day may be found. The fields in the spectral archive are stored in the format required by the post-processing (p-p) package. Details of the format and of the subroutines to be used for accessing the data are described in the manual for the p-p package. Some examples are shown in Swinbank (1984). The fields in the daily grid-point archive are stored as printfiles (Lowther 1986). A list of the fields in each of the two versions of the daily archive is given in the relevant documentation.

The monthly and seasonal mean fields have been computed from the spectral archive up to the end of October 1986. Thereafter, they have been computed from the grid-point archive. The mean fields are held as computer data sets in Met O 20, in spectral or grid-point format, as appropriate, and are available for general use. Means for each month and season over three years of the spectral archive are also available. The mean fields that are held are as follows:

Field		Pressure level (mb)
Westerly wind component	(m/s)	
Southerly wind component	(m/s)	1000*, 850, 700, 500, 400, 300,
Height	(dam)	250, 200, 150, 100, 70, 50
Temperature	(K)	
Relative humidity	(%)	1000*, 850, 700, 500, 400, 300
Pressure at mean sea level	(mb)	

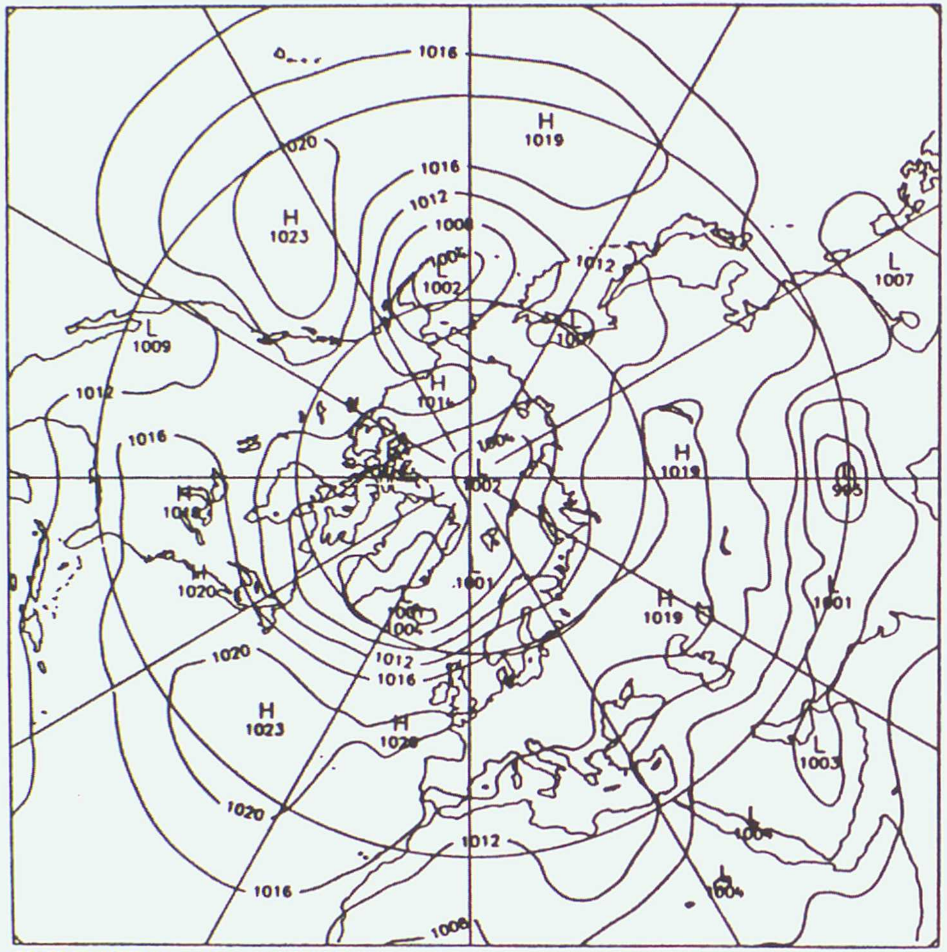
* Fields at 1000 mb are held in the spectral archive. In the grid-point archive this level has been omitted and fields at 950 mb are held instead.

References

Bell, R.S. and Dickinson, A.	1987	The Meteorological Office operational numerical weather prediction system, Meteorological Office Scientific Paper No. 41, Met.O.979, HMSO.
Lowther, D.	1986	WGDOS Printfile Archive, Operational NWP Scheme, Documentation Paper No. 9.1, Met O 2b, Meteorological Office, Bracknell.
Swinbank, R.	1984	A system to archive operational analyses for research purposes. Met O 20 Technical Note No. II/218. Meteorological Office, Bracknell.

SEPTEMBER
1989

OPERATIONAL ARCHIVE MEANS.   SEPTEMBER 1989
PMSL
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
SEA LEVEL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L 1002
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H 1019
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H 1020
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1012
1016
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H 1023
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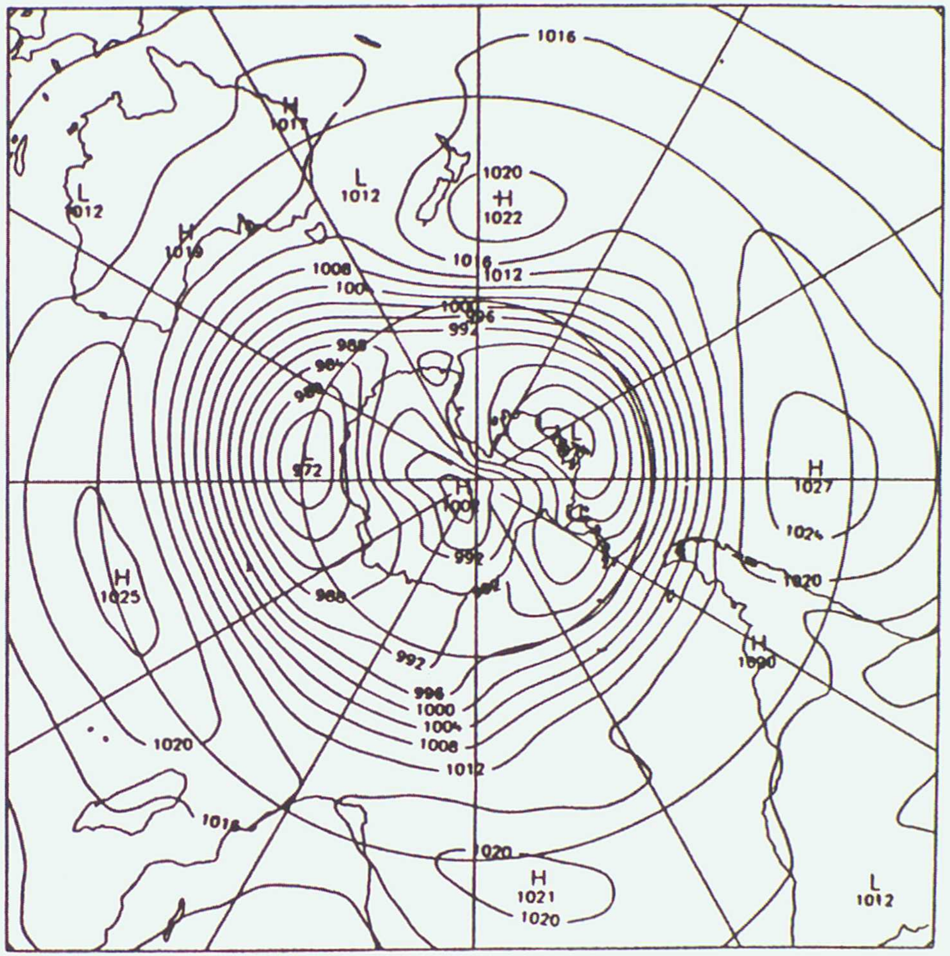
1020
1012
L 1004
1016
L 1004
1008

CONTOUR INTERVAL: 4 MB   UNITS: MB

OPERATIONAL ARCHIVE MEANS.   SEPTEMBER 1989
PMSL
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
SEA LEVEL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992
H 1027
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1020
H 1025
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H 1090
996
1000
1004
1008
1012
1020
1016
1020
H 1021
1020
L 1012

CONTOUR INTERVAL: 4 MB   UNITS: MB

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
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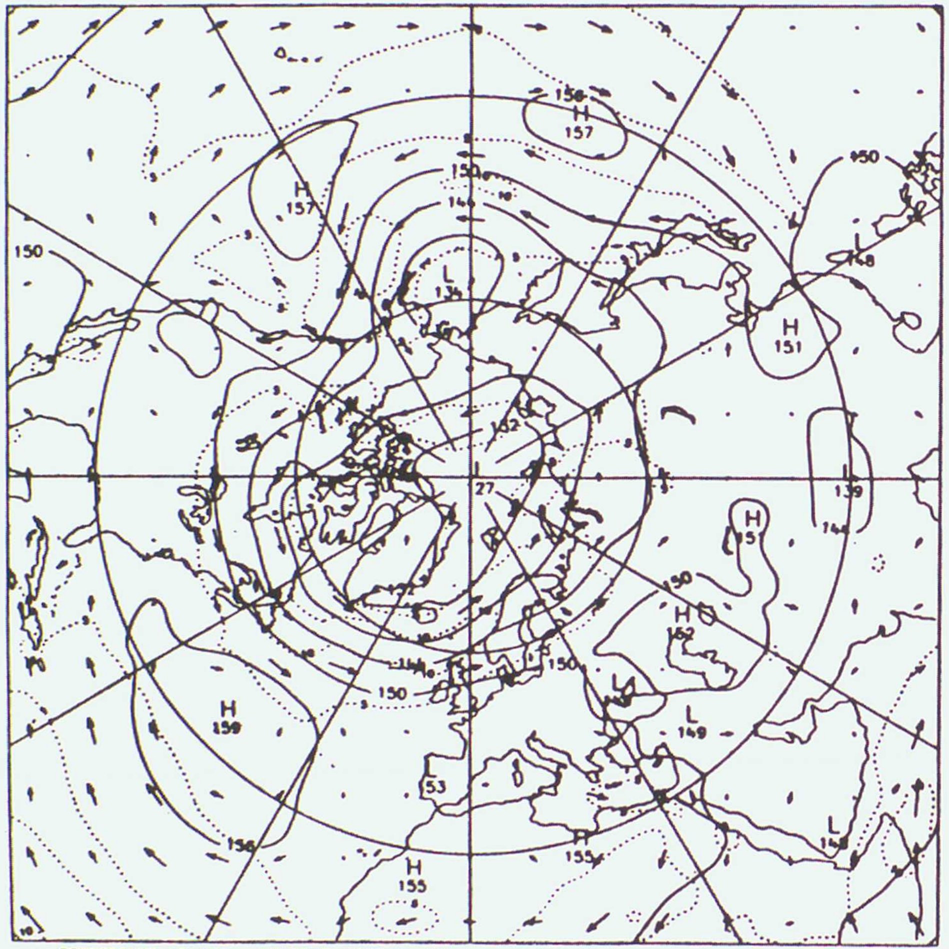
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H
152
150
144
150
L
149
H
159
L
153
156
H
155
155
L
148

→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
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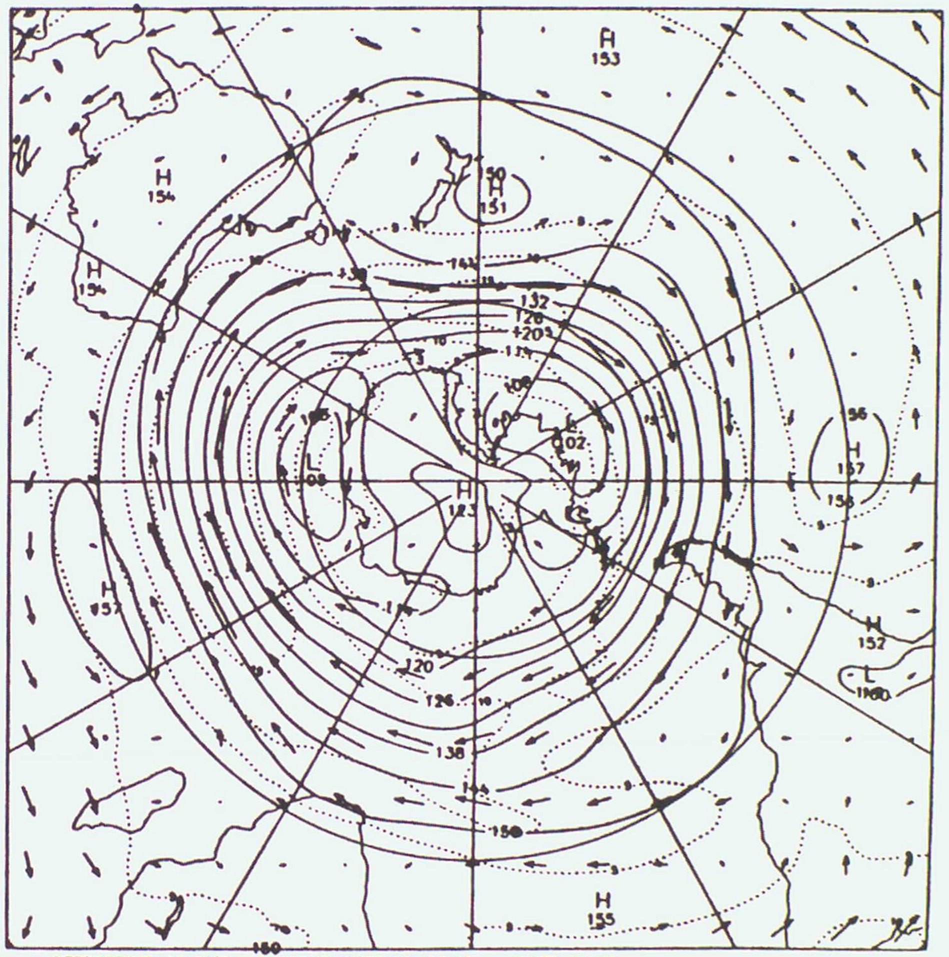
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H
157
120
126
138
144
150
H
152
L
160
H
155

→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
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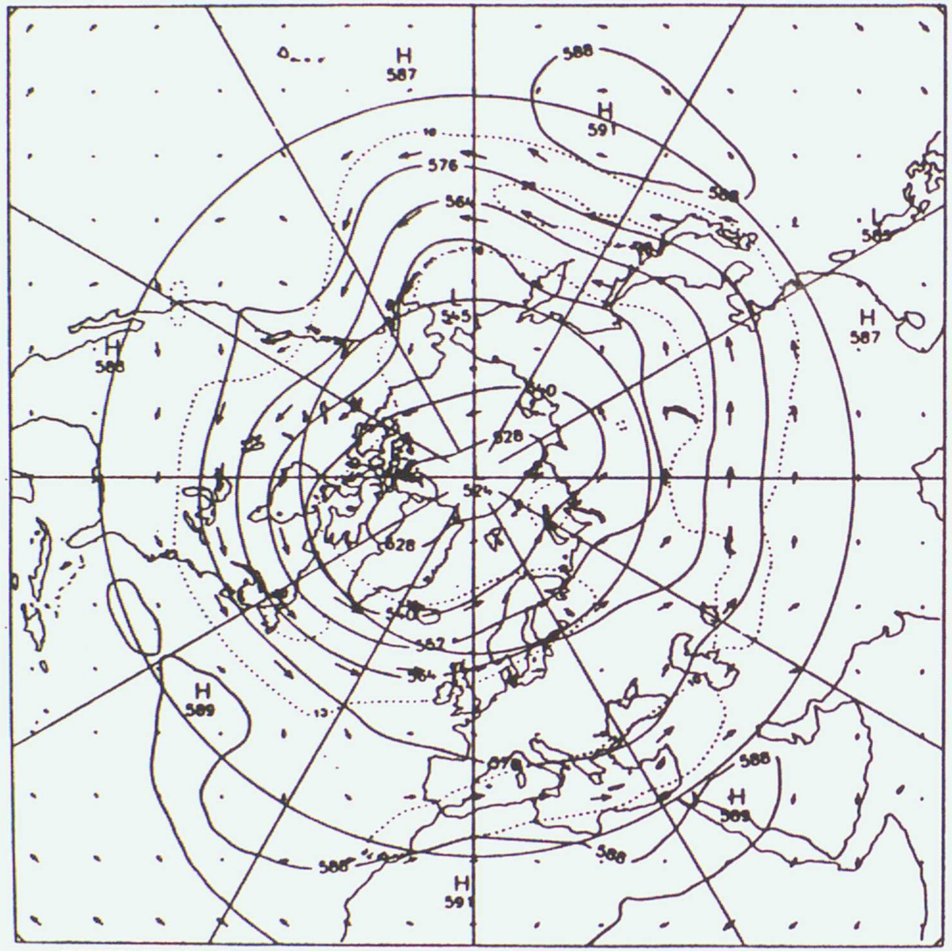
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552
564
13
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589
576
588
H
589
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588
H
591

→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
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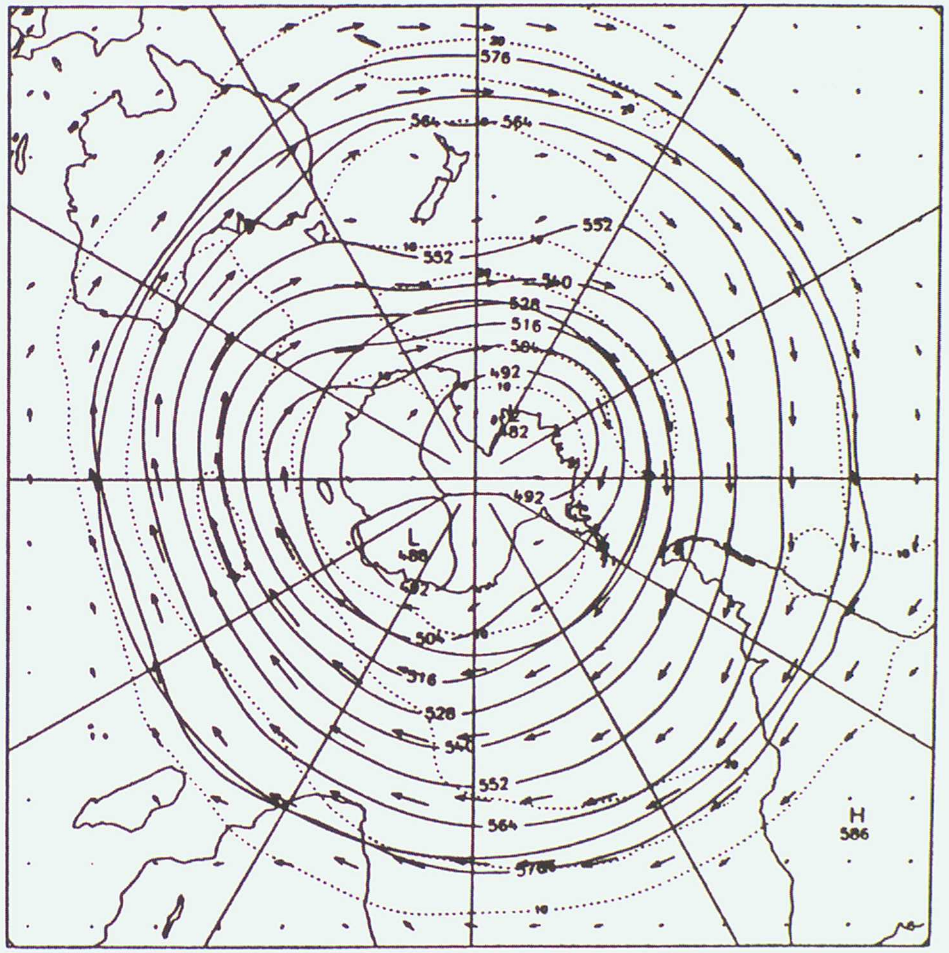
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540
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564
576
10
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586

→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
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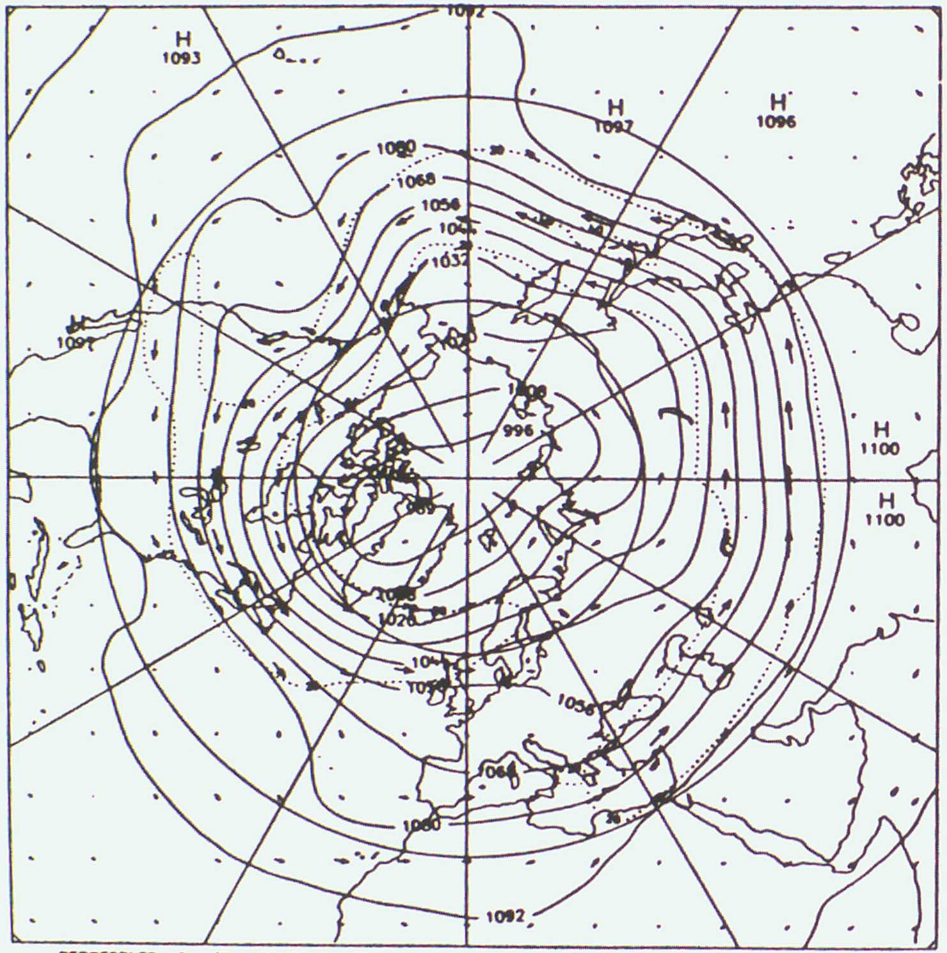
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1044
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1056
1068
1080
1092
30

→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
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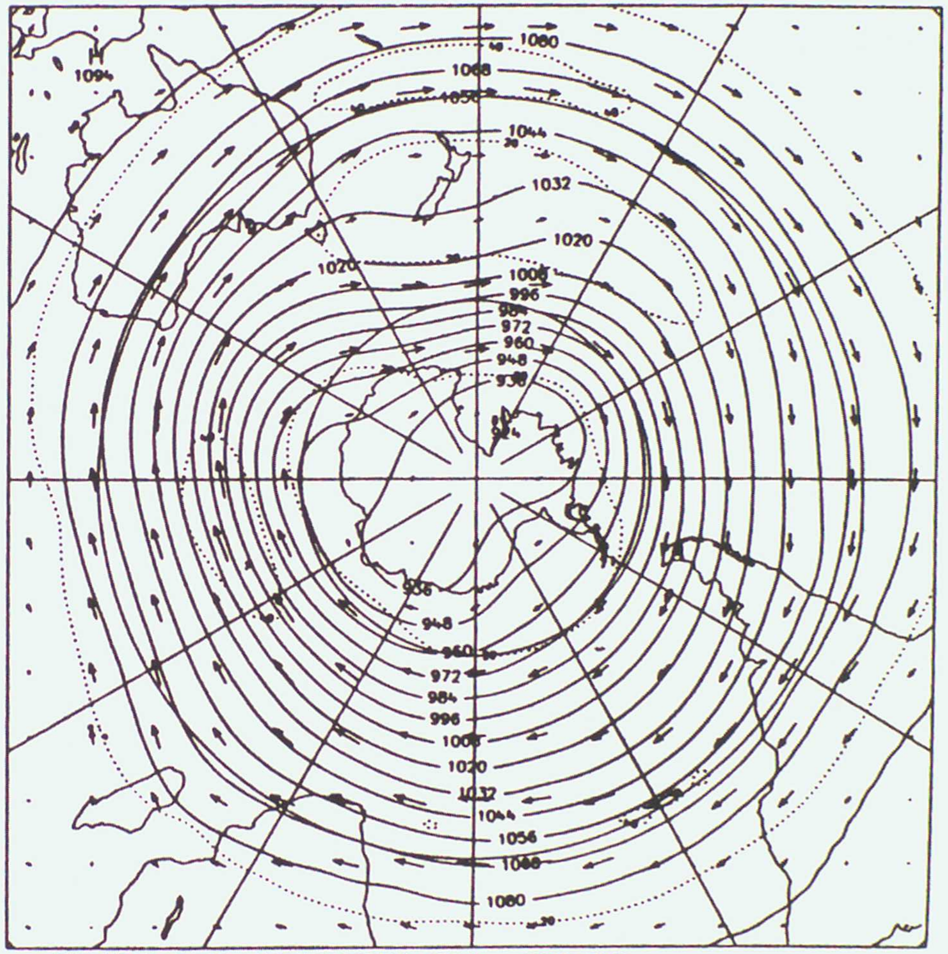
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972
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996
1008
1020
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1056
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1080
40
30
20

→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
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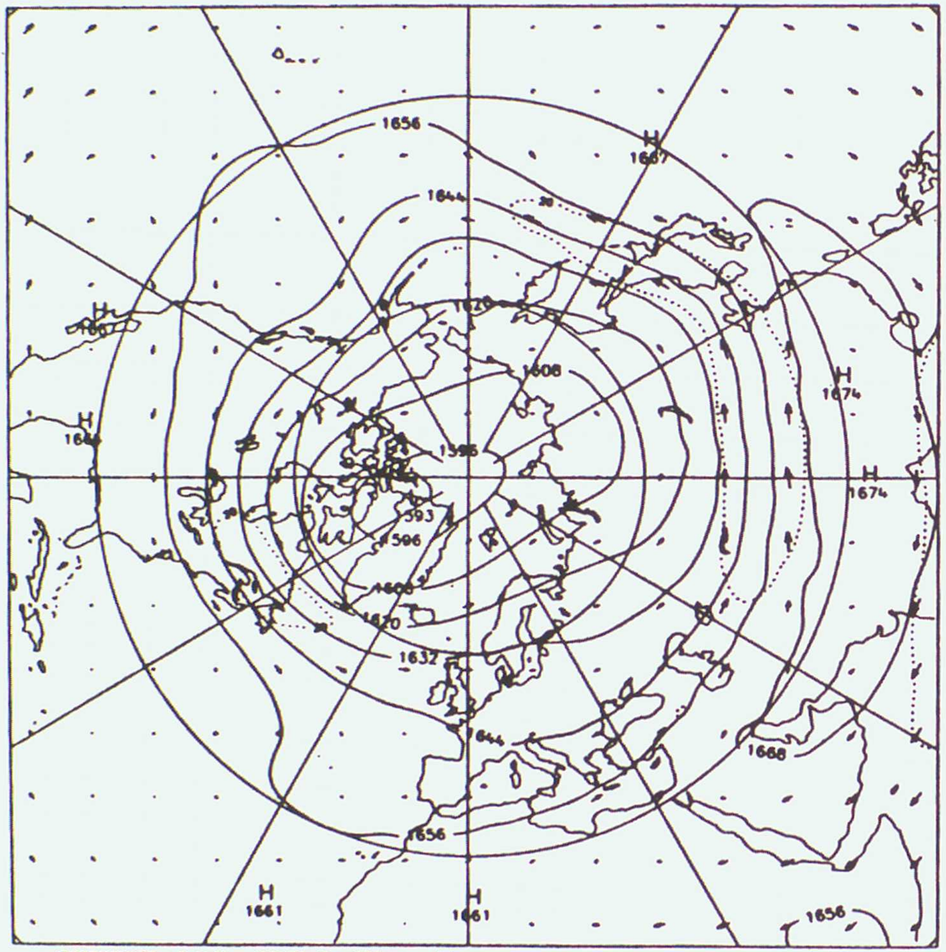
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→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
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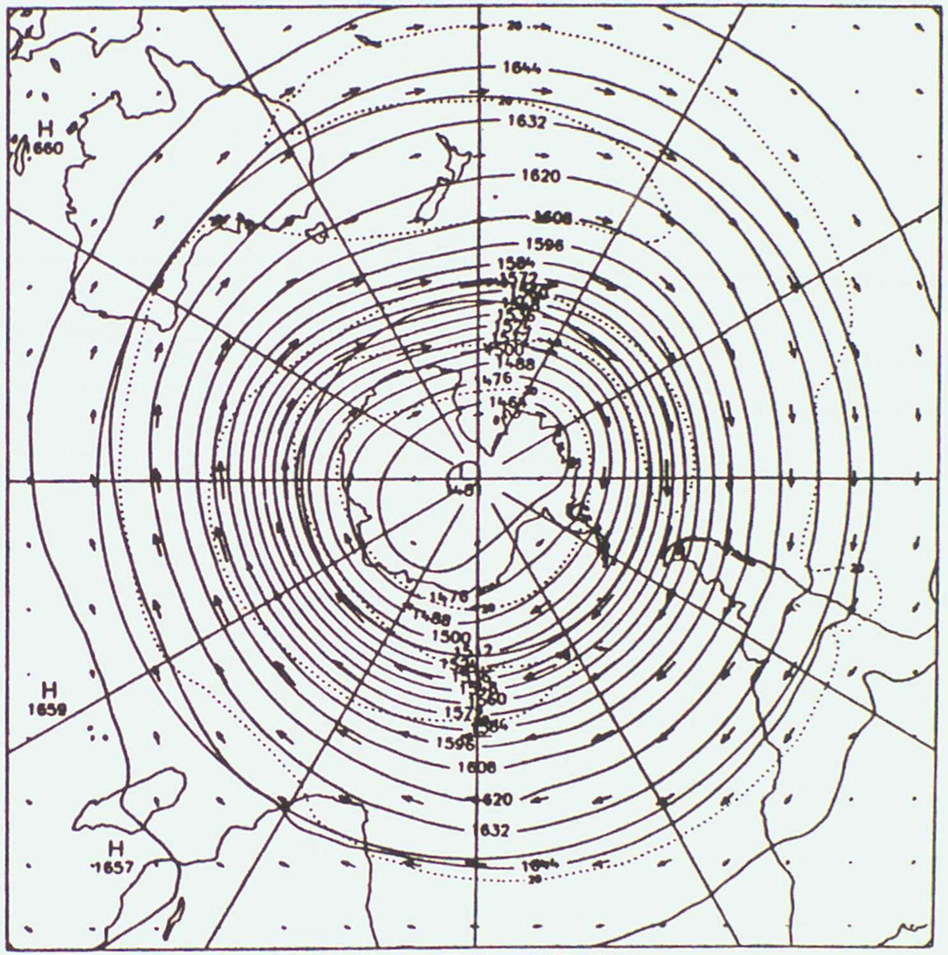
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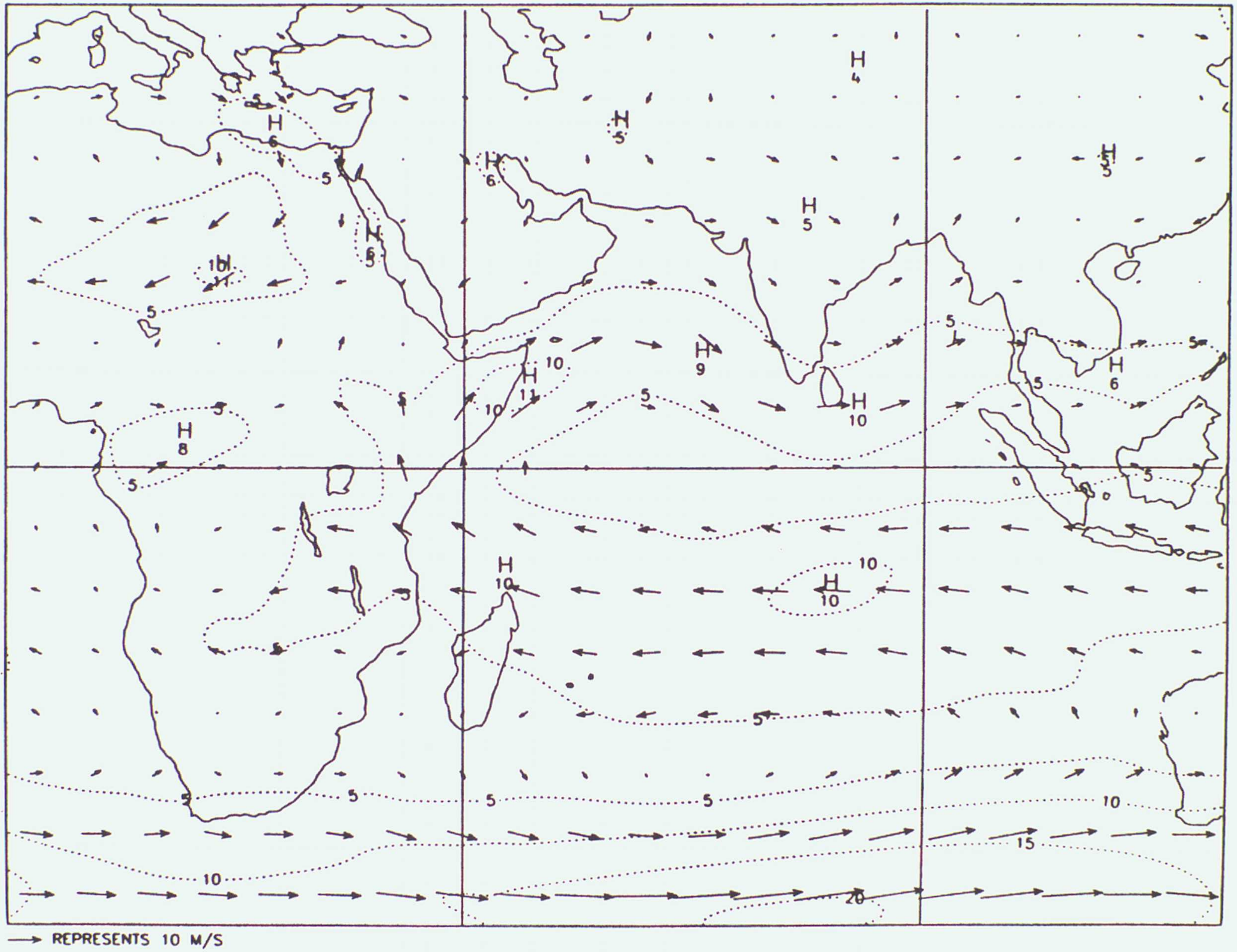
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS.   SEPTEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
850 MBS.   BETWEEN LONGS. 0 E - 120 E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H
8
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H
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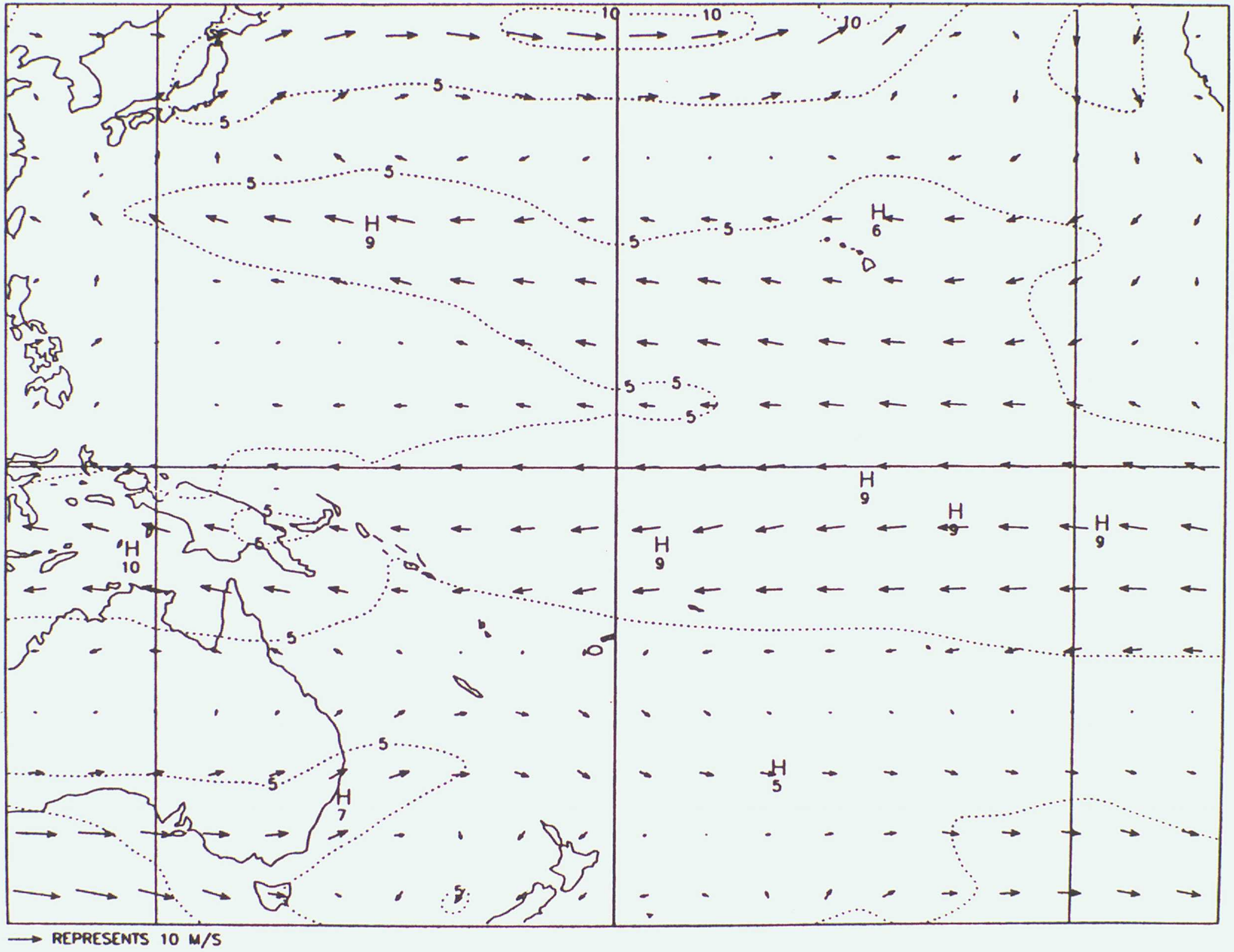
10
5
15
20
→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
850 MBS. BETWEEN LONGS. 120 E - 120 W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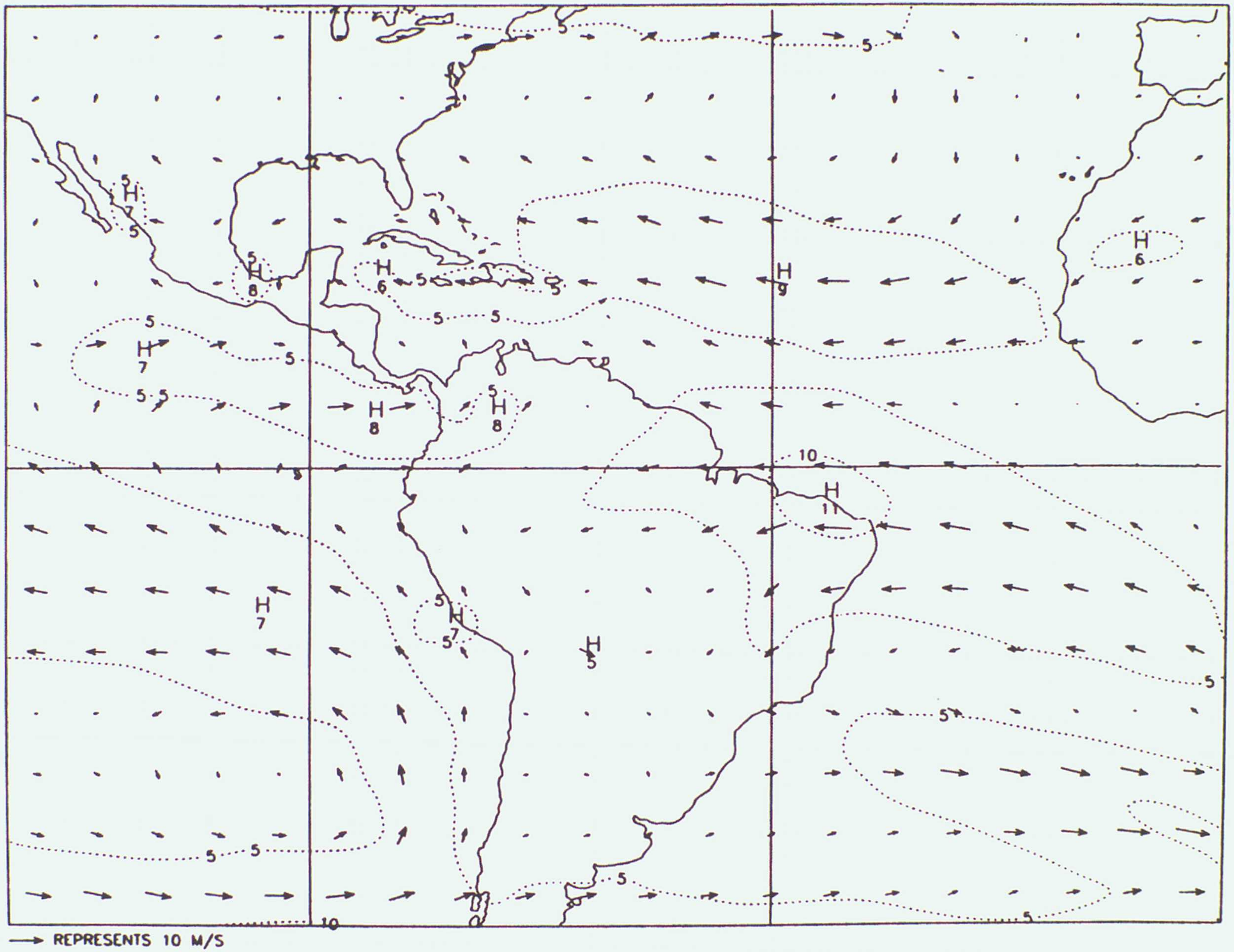
→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
850 MBS. BETWEEN LONGS. 120 W - 0 W



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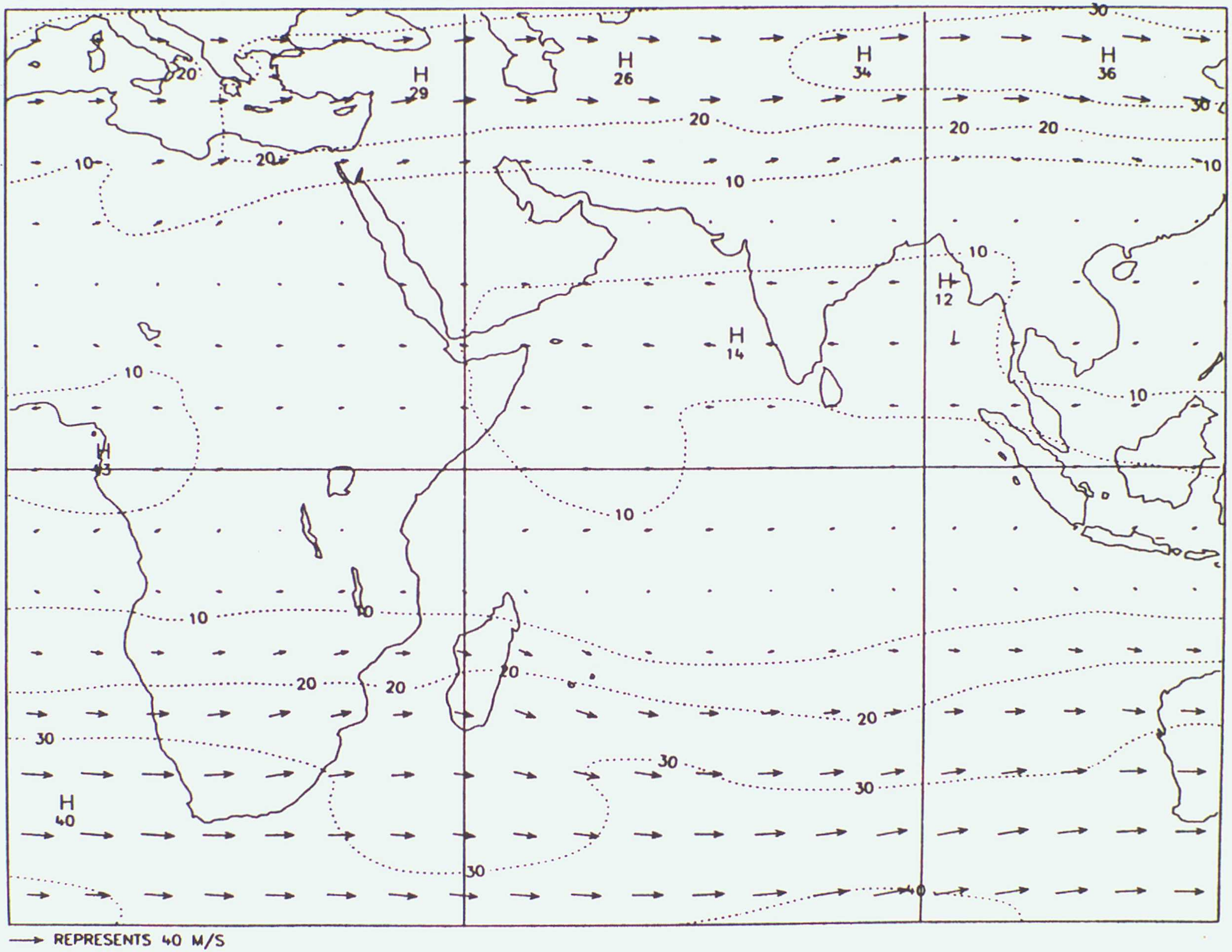
→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS.   SEPTEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
250 MBS.   BETWEEN LONGS. 0 E - 120 E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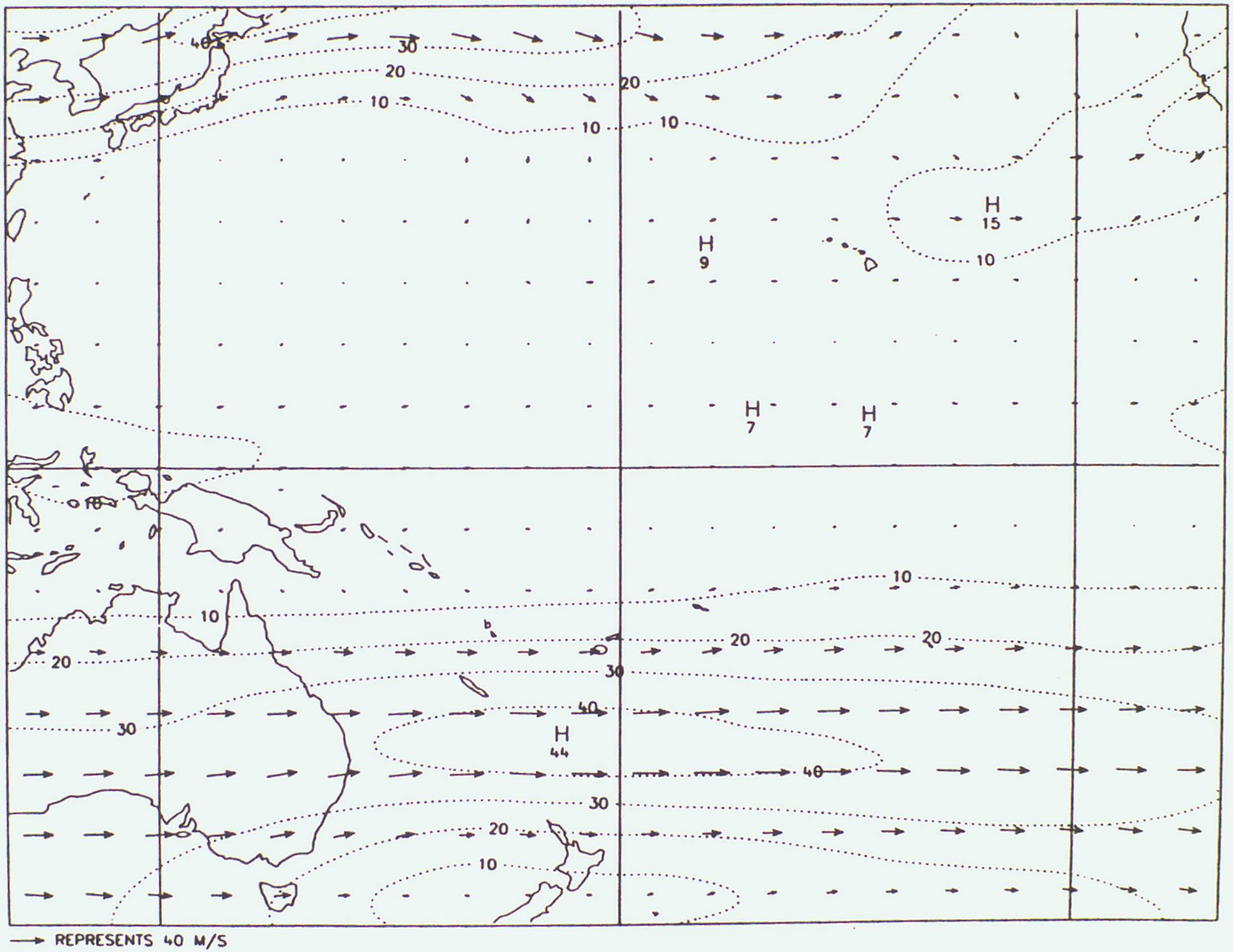
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. SEPTEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
250 MBS. BETWEEN LONGS. 120 E - 120 W



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44
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS.   SEPTEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/9/1989 DAY 273
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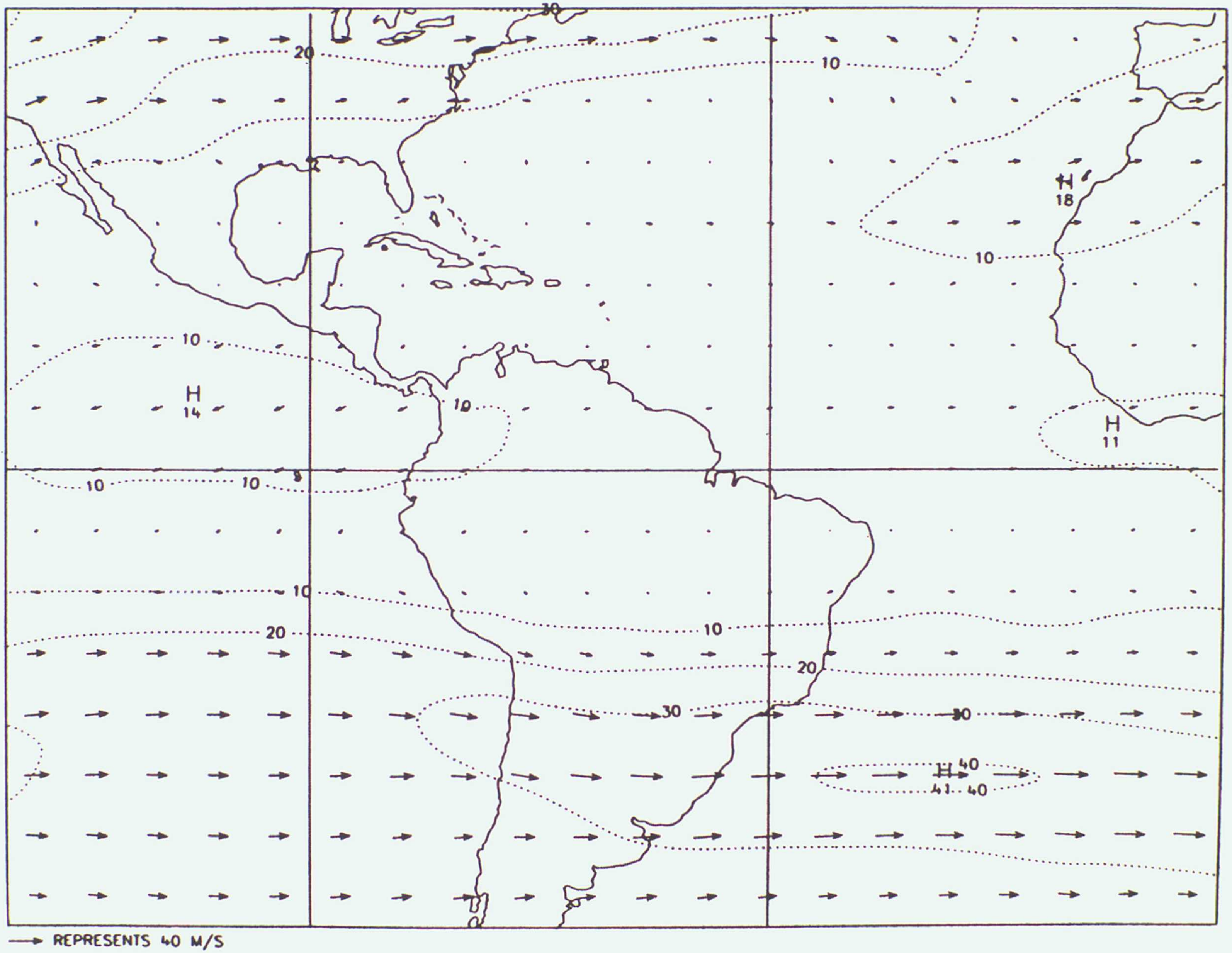
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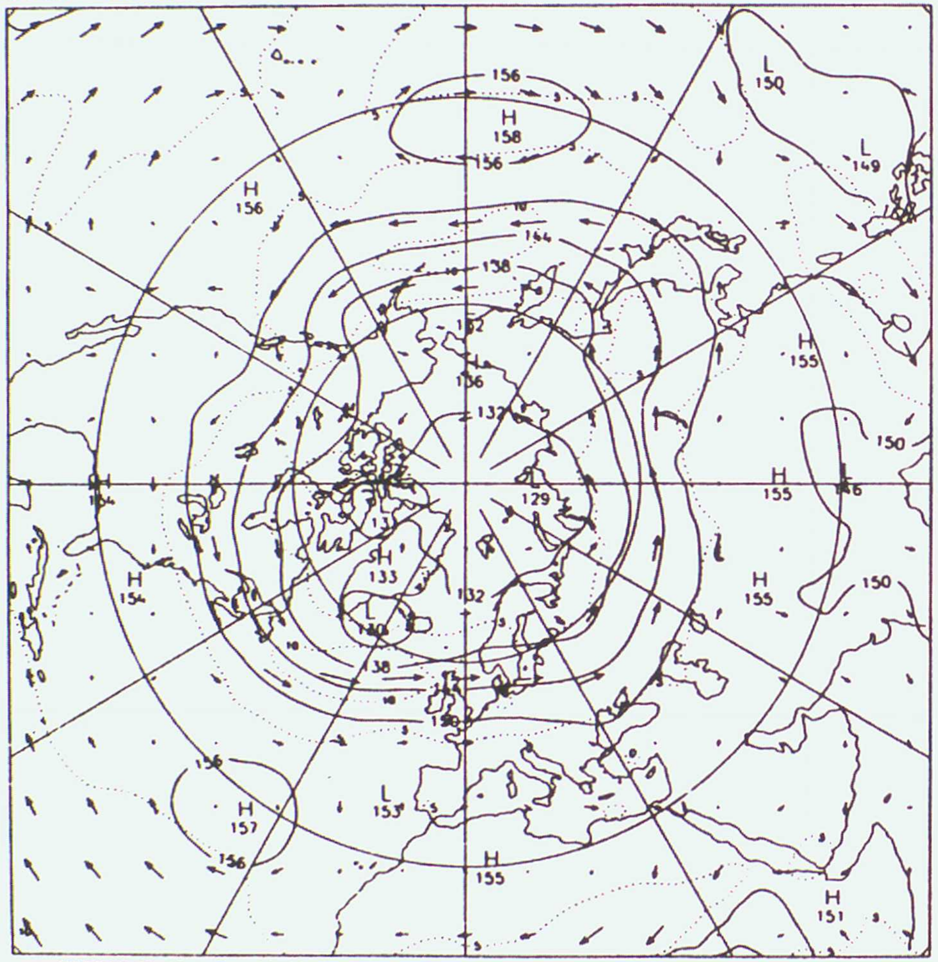
30
H 40
41 40
→ REPRESENTS 40 M/S

OCTOBER
1989

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
LEVEL: 850 MB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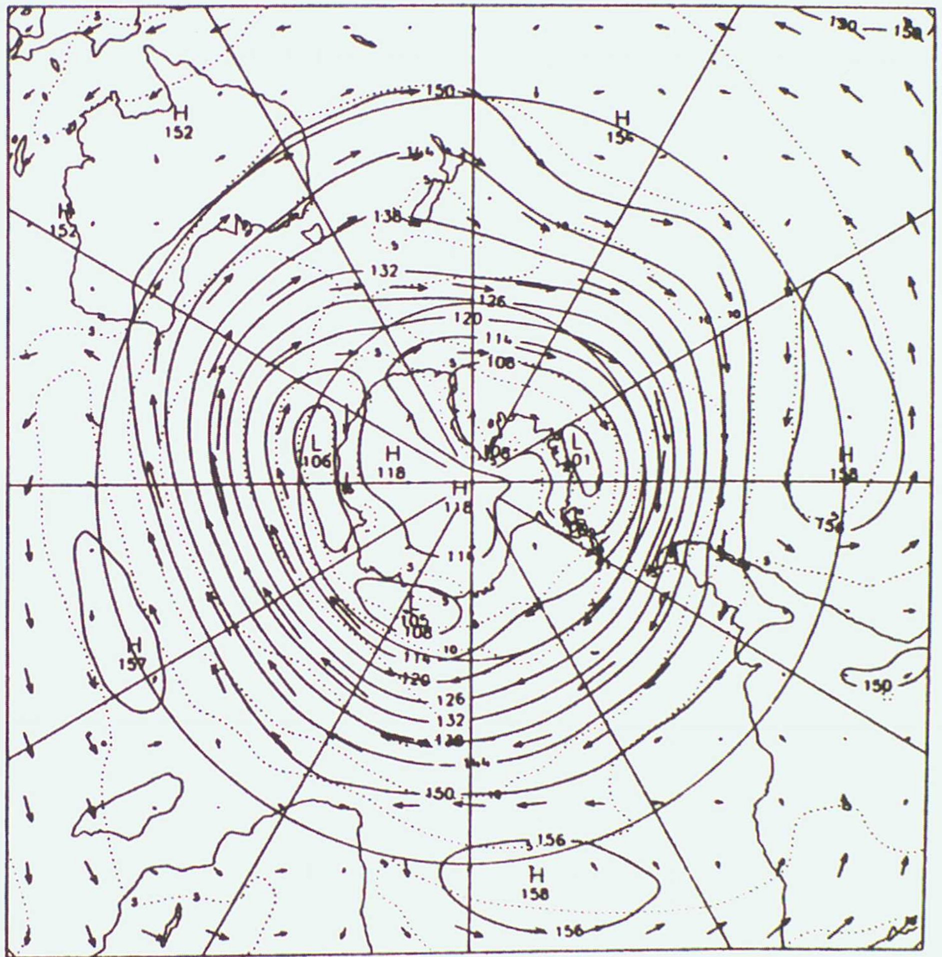
146
H
155
150
H
154
SH
133
132
L
130
138
156
H
157
156
L
153
H
155
H
151

→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
LEVEL: 850 MB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138
144
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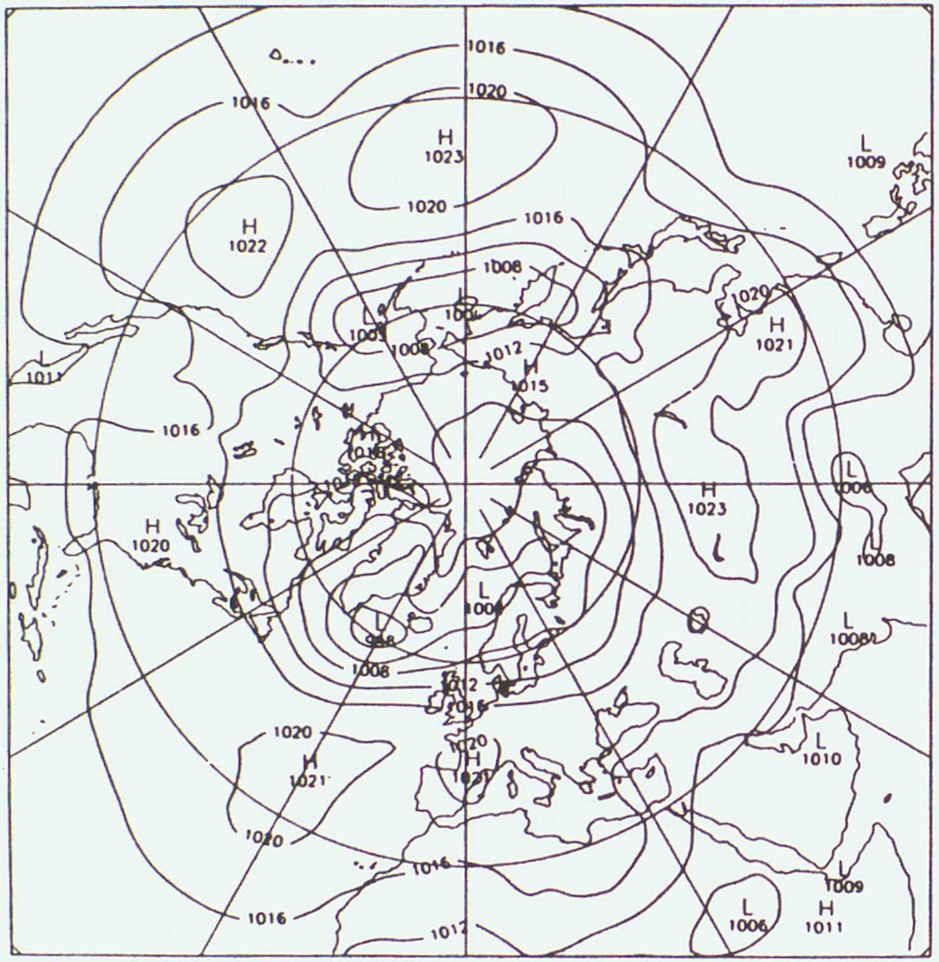
156
H
158
156

→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS.   OCTOBER   1989
PMSL
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
SEA LEVEL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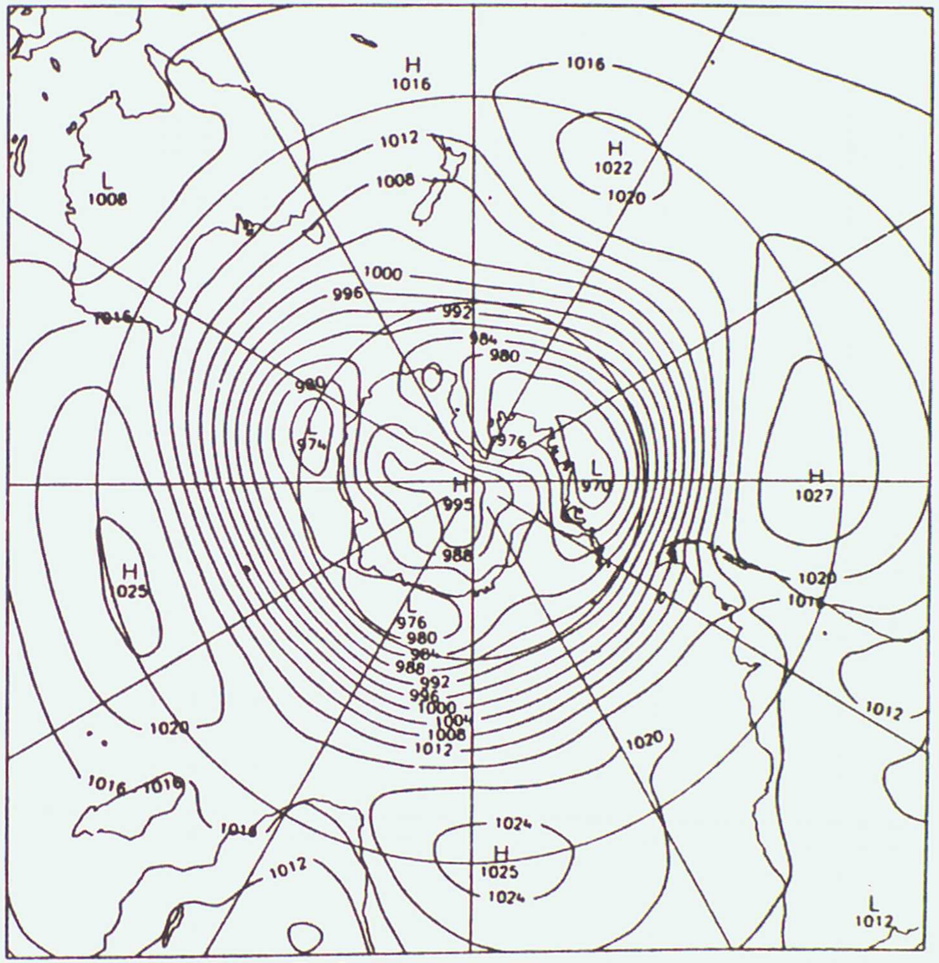
1020
1012

CONTOUR INTERVAL: 4 MB   UNITS: MB

OPERATIONAL ARCHIVE MEANS.   OCTOBER   1989
PMSL
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
SEA LEVEL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996
992
984
980
988
1004
1020
1024

CONTOUR INTERVAL: 4 MB   UNITS: MB

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
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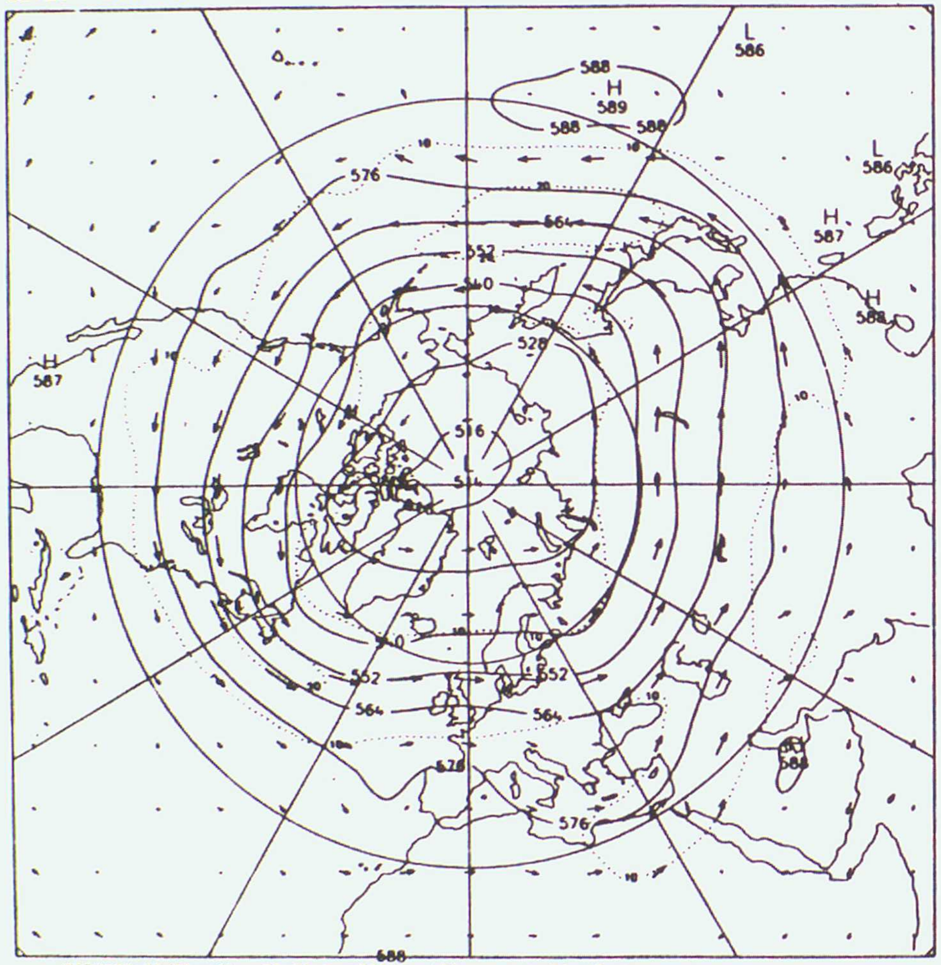
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564
552
564
576
576
H
584
588
10
20

→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
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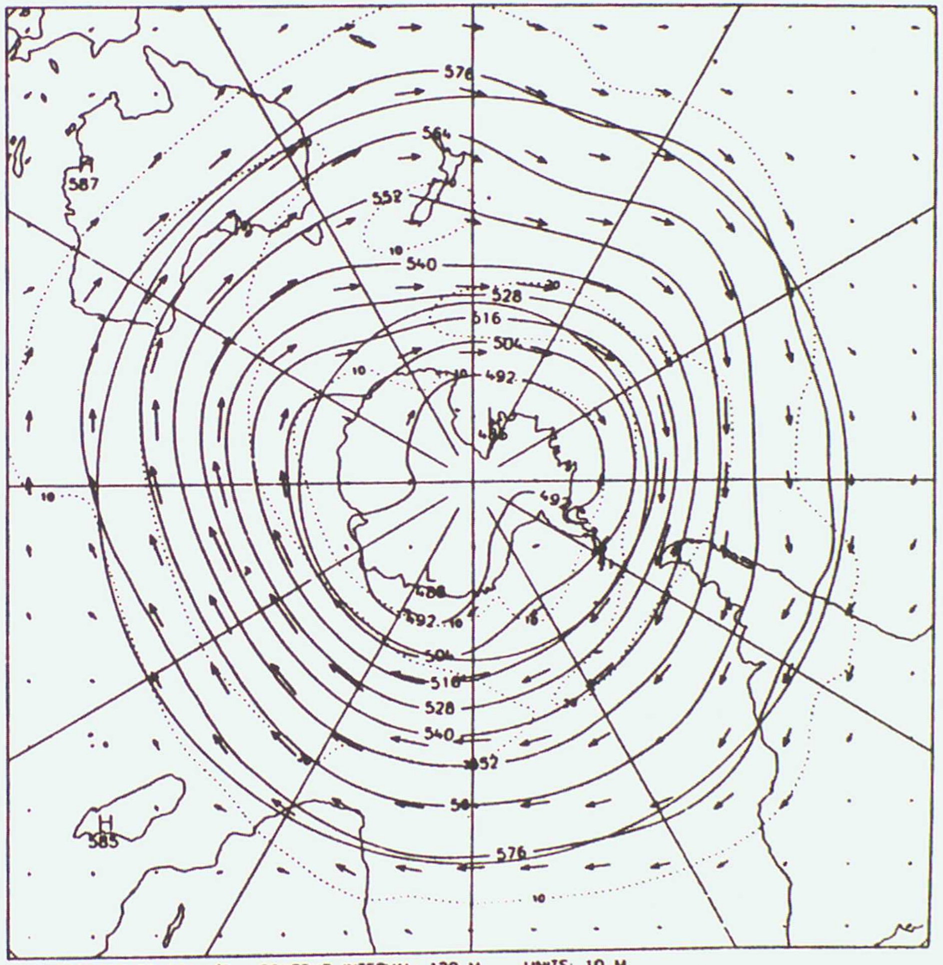
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H
585
10
20

→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
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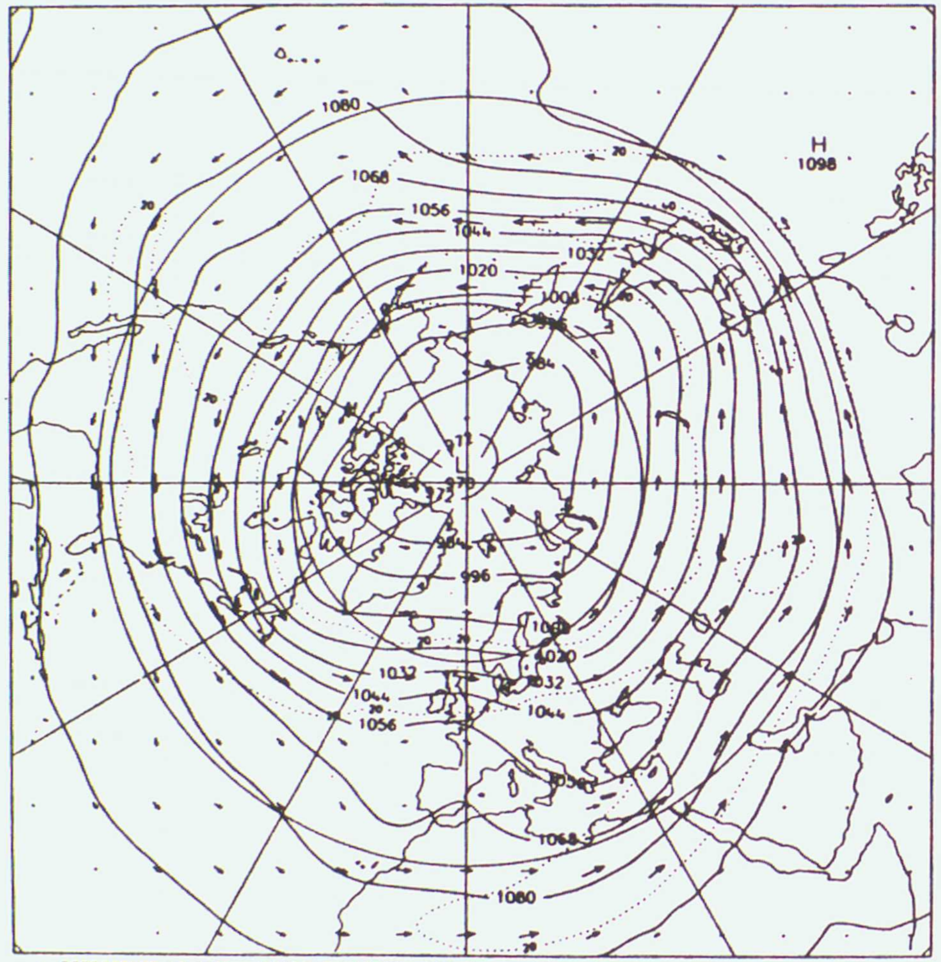
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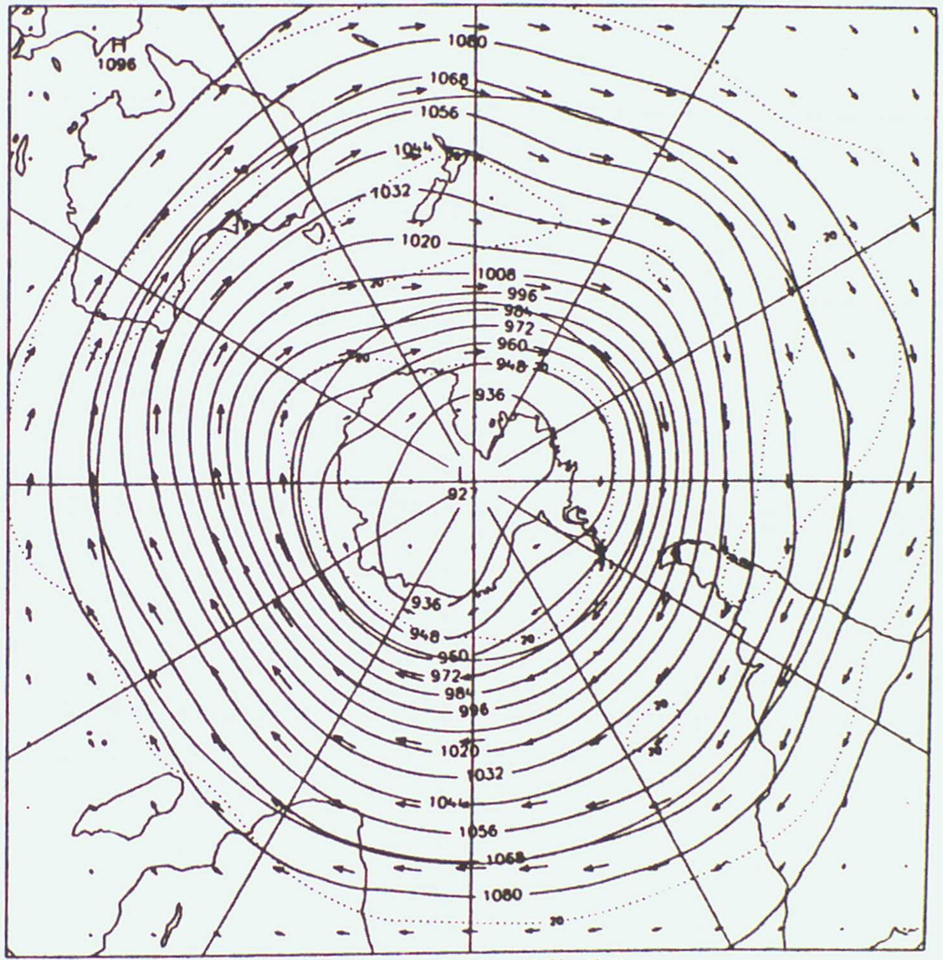
1032
1020
1008
996
984
972
972
20
40

→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
LEVEL: 250 MB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984
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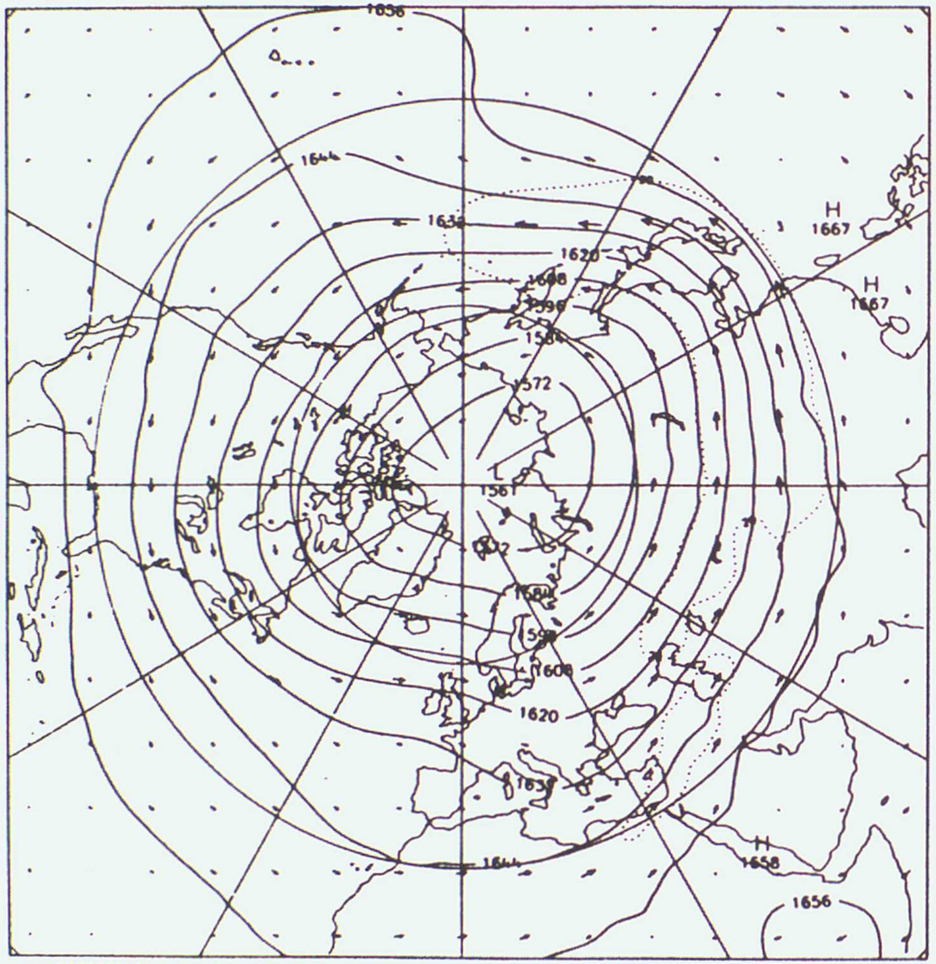
20

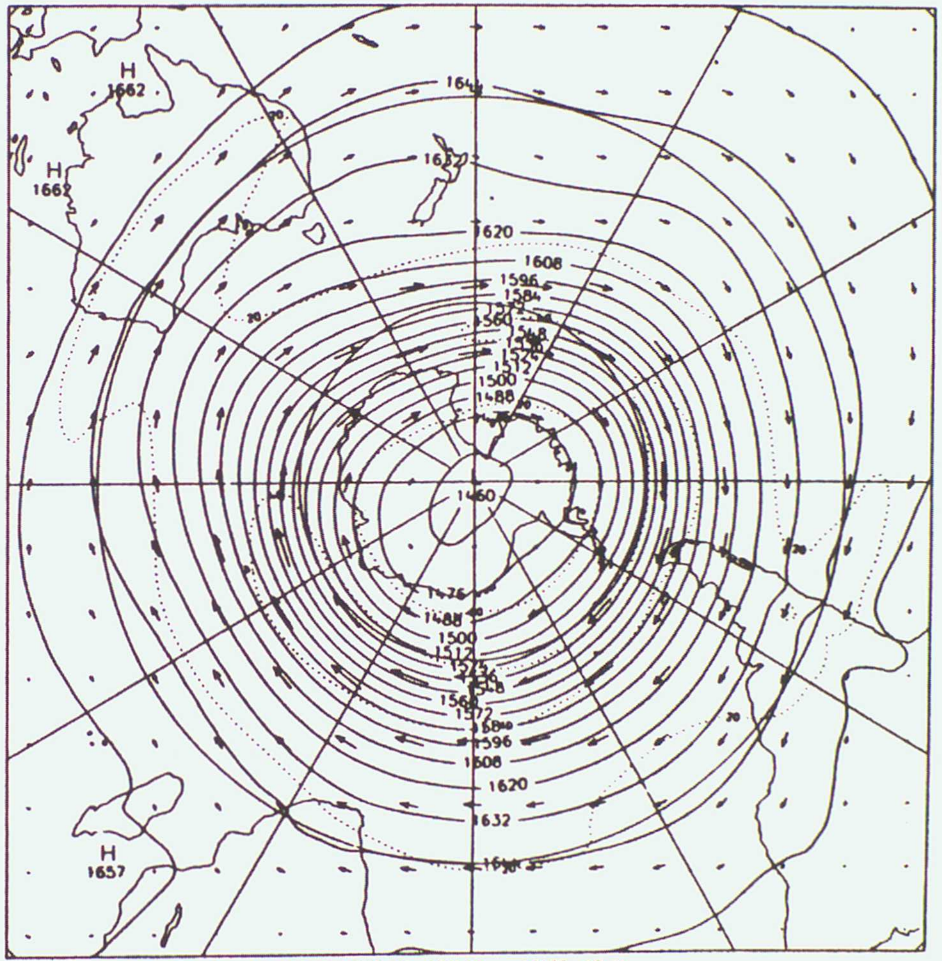
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
LEVEL: 100 MB


1656
1644
1632
1620
1608
1596
1584
1572
L
1561
1572
1584
1596
1608
1620
1632
1644
H
1667
H
1667
H
1658
1656
20

→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
LEVEL: 100 MB


H
1662
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1662
1644
1632
1620
1608
1596
1584
1572
1560
1548
1536
1524
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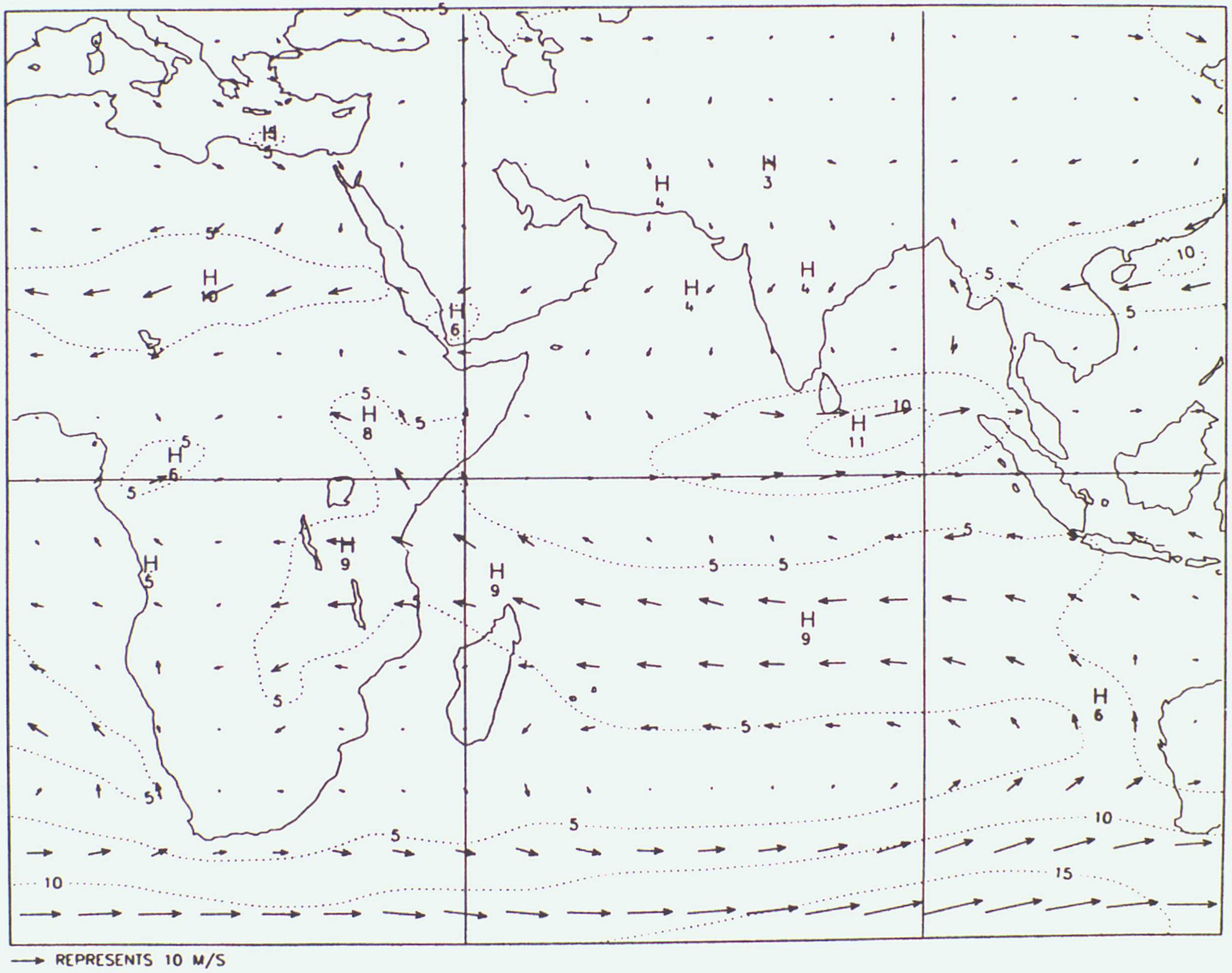
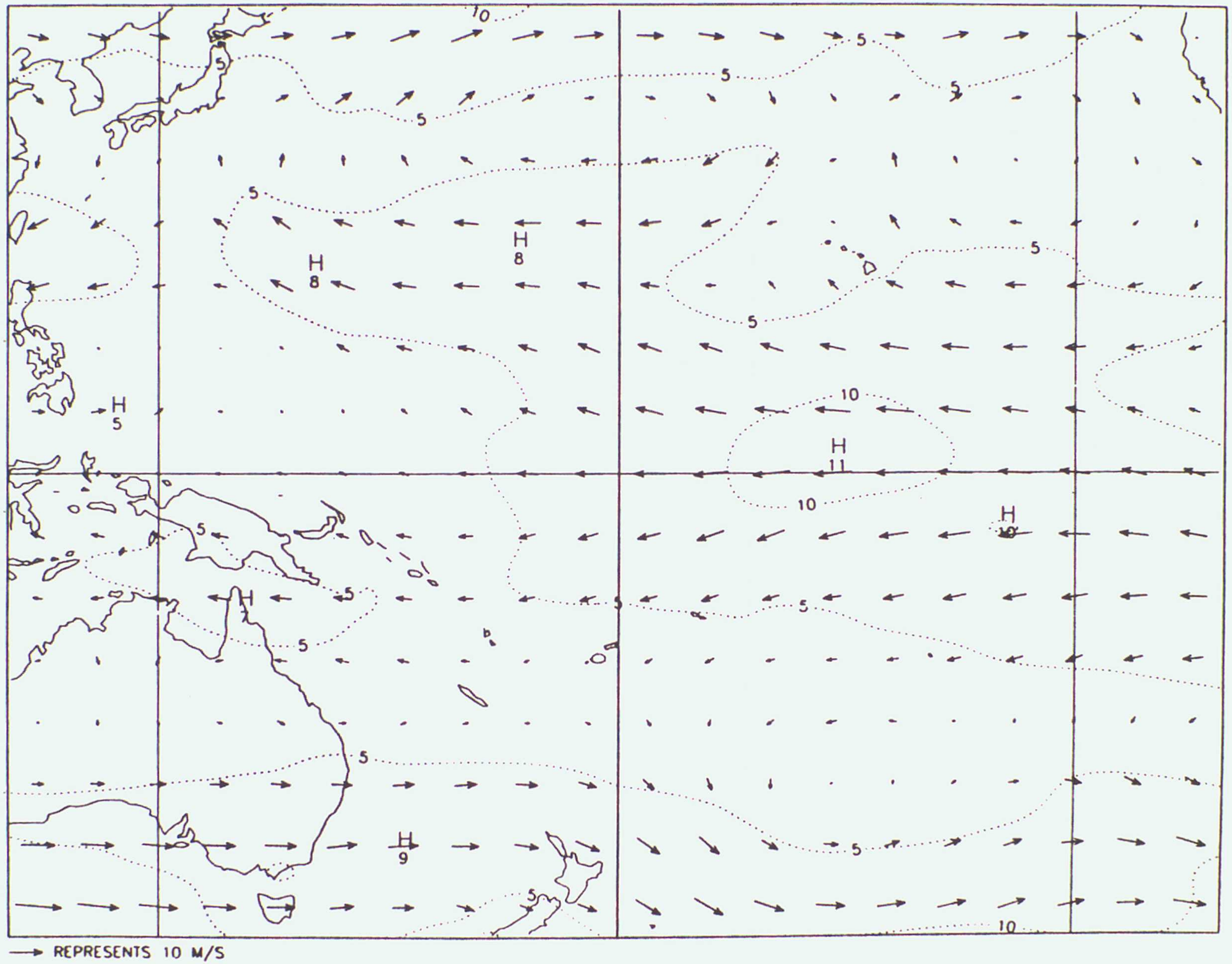
1500
1488
1460
1476
1488
1500
1512
1524
1536
1548
1560
1572
1584
1596
1608
1620
1632
1644
H
1657
20

→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
850 MBS. BETWEEN LONGS. 0 E - 120 E

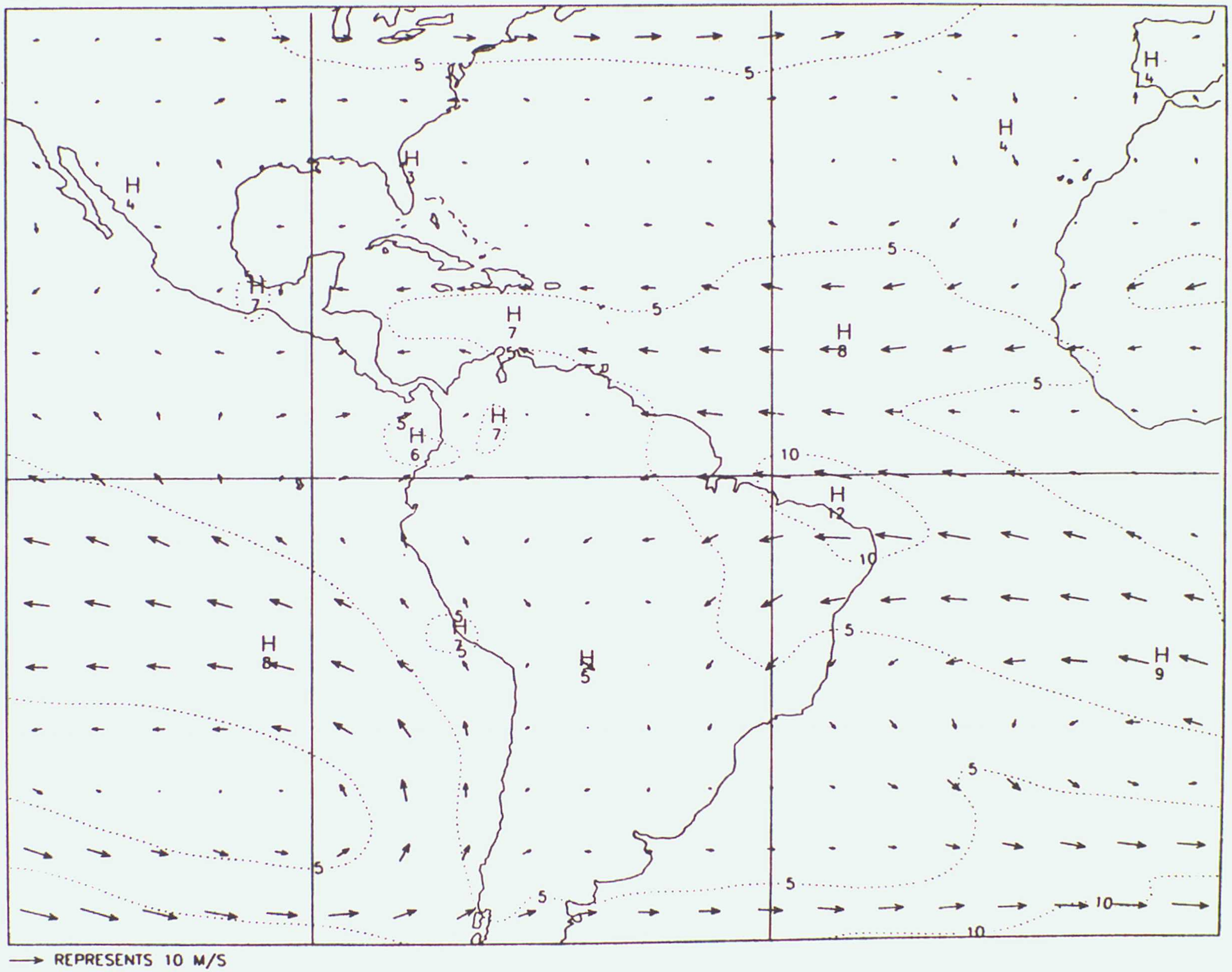

H
3
H
4
H
5
H
6
H
8
H
9
H
10
H
11
H
14
5
10
15
REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
850 MBS. BETWEEN LONGS. 120 E - 120 W

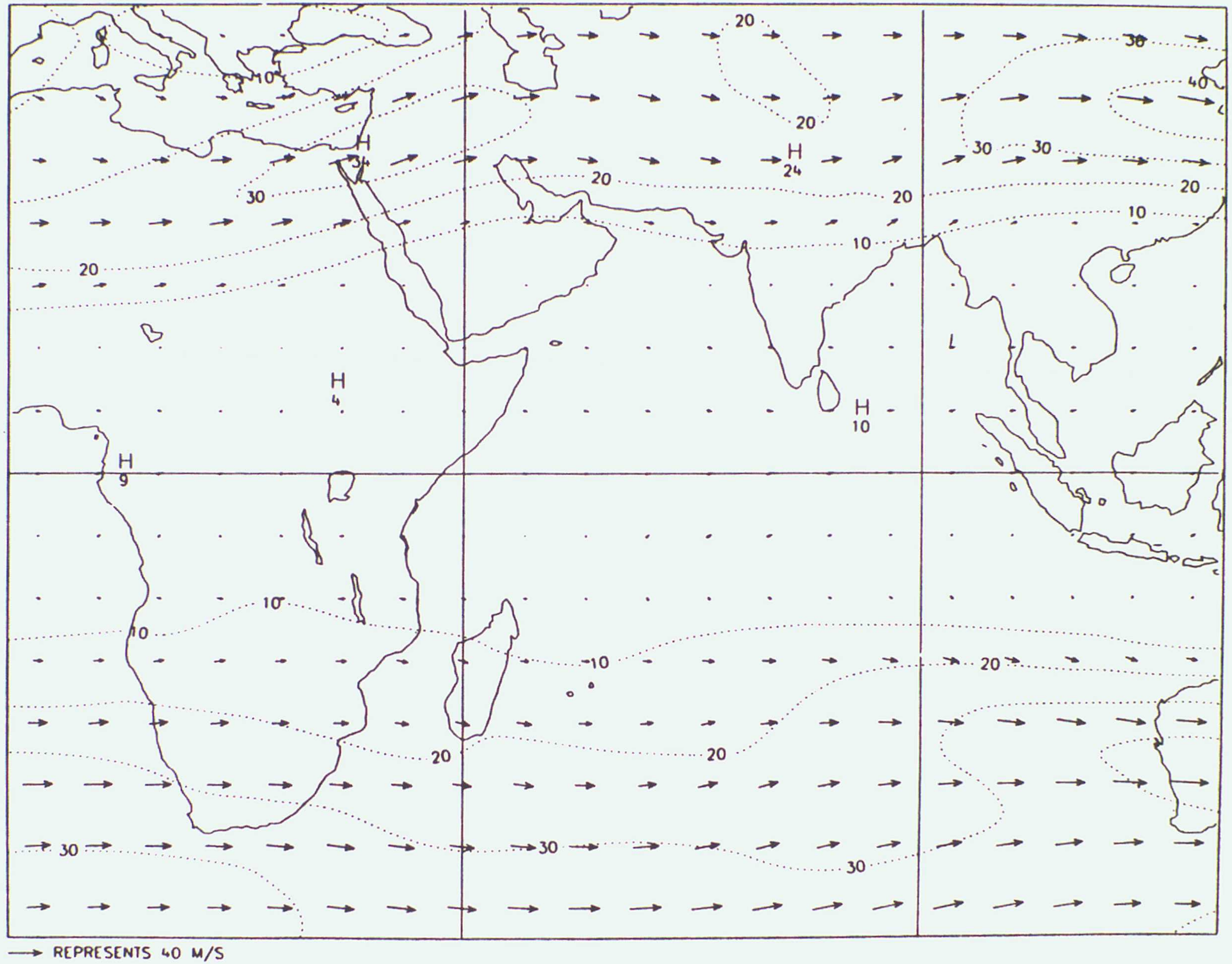


5
10
H 8
H 8
H 5
H 11
10
H 10
H
H 9
→ REPRESENTS 10 M/S

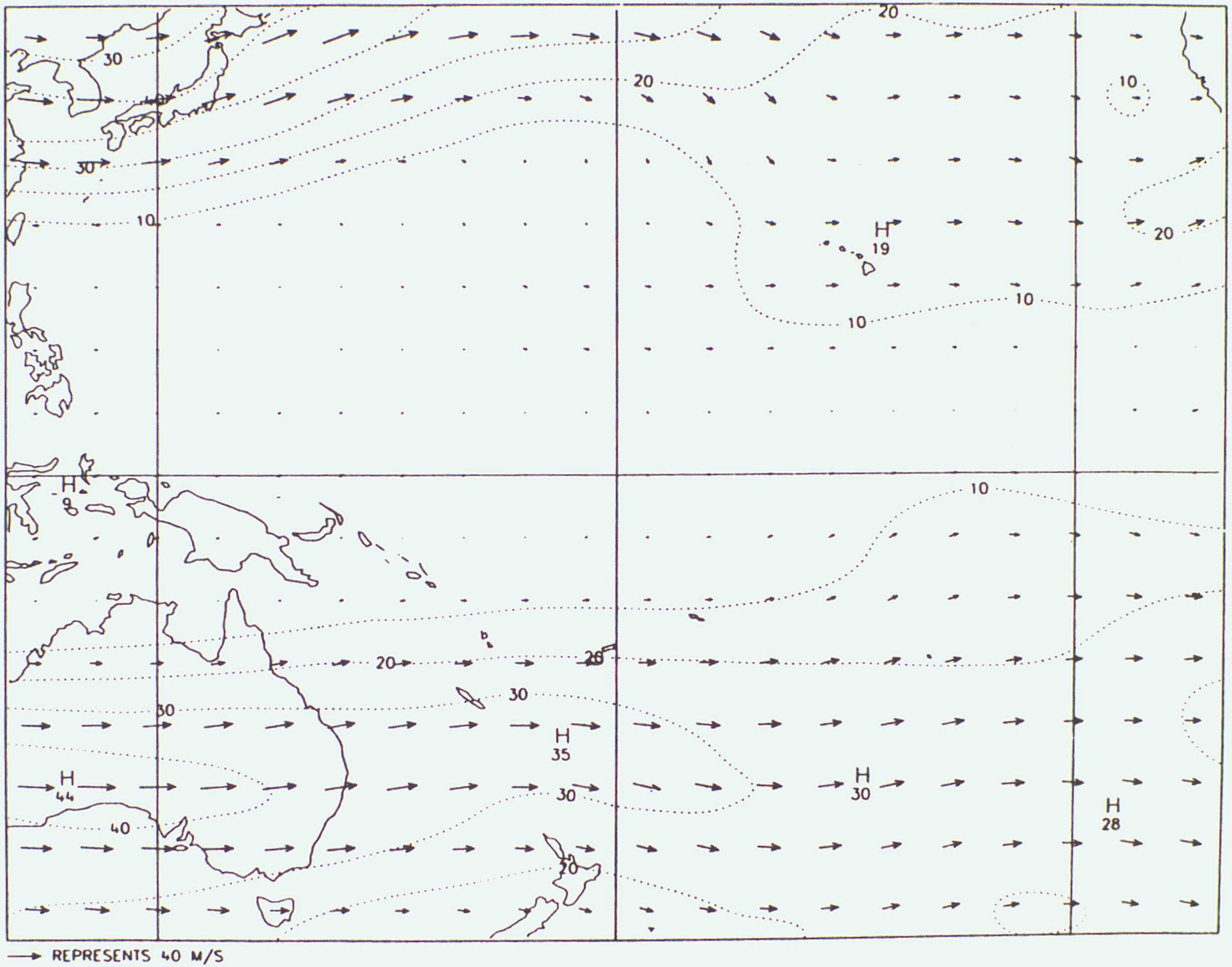
OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
850 MBS. BETWEEN LONGS. 120 W - 0 W


H 4
H 4
H 4
H 3
H 7
H 7
H 8
H 7
H 6
H 12
H 8
H 2
H 5
H 9
5
10
→ REPRESENTS 10 M/S

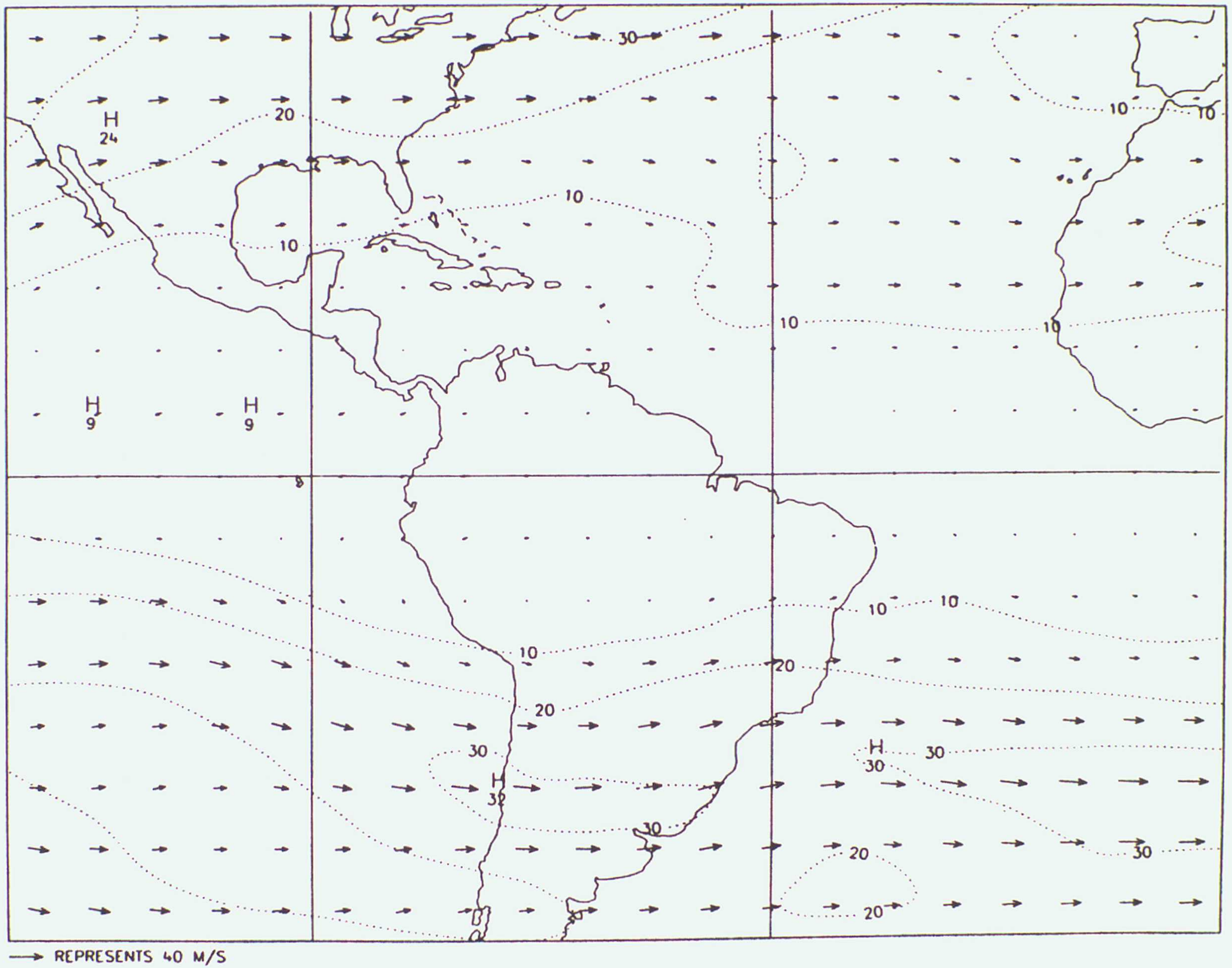
OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
250 MBS. BETWEEN LONGS. 0 E - 120 E


20
10
H
34
30
40
H
24
20
10
L
H
4
H
10
H
9
10
20
30
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. OCTOBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
250 MBS. BETWEEN LONGS. 120 E - 120 W

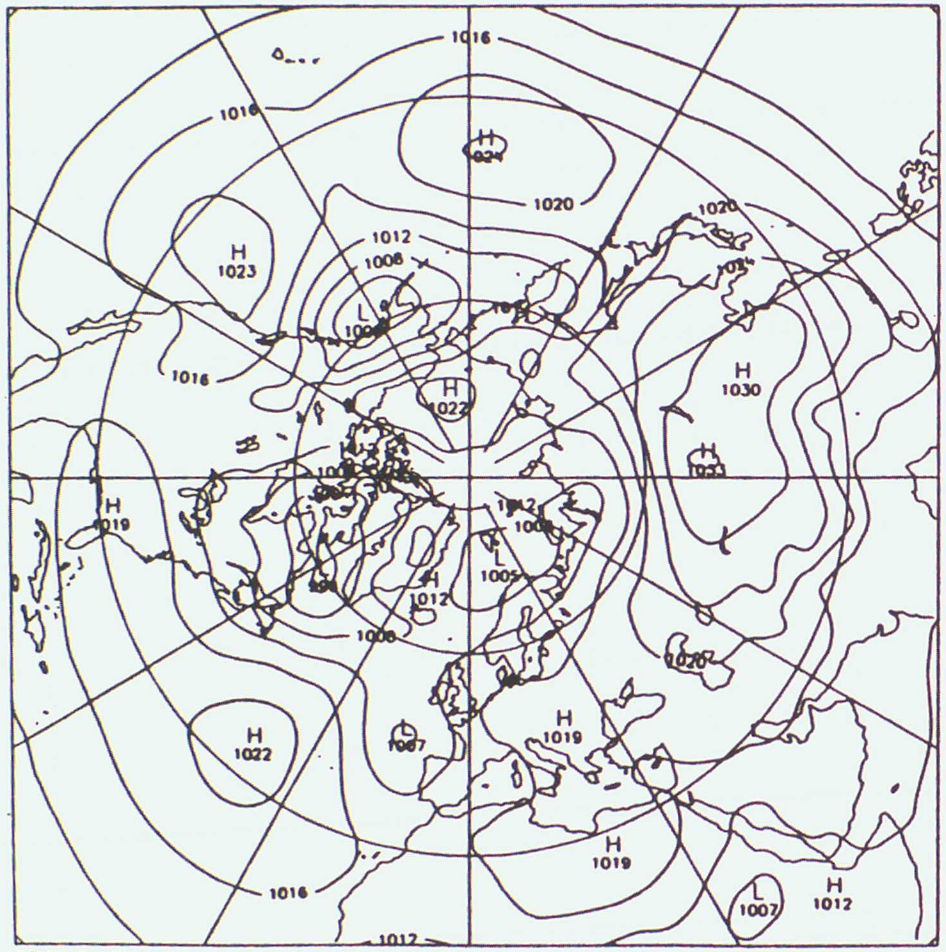

30
30
10
20
20
10
H
19
20
10
10
10
H
8
20
30
30
H
35
H
44
40
30
H
30
H
28
20
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS.   OCTOBER   1989
WIND ARROWS AND ISOTACHS   BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/10/1989 DAY 274 TO 12Z ON 31/10/1989 DAY 304
250 MBS.   BETWEEN LONGS. 120 W - 0 W


30
H
24
20
10
10
10
10
10
10
10
H
9
H
9
10
10
10
20
20
30
H
32
30
H
30
30
20
30
20
→ REPRESENTS 40 M/S

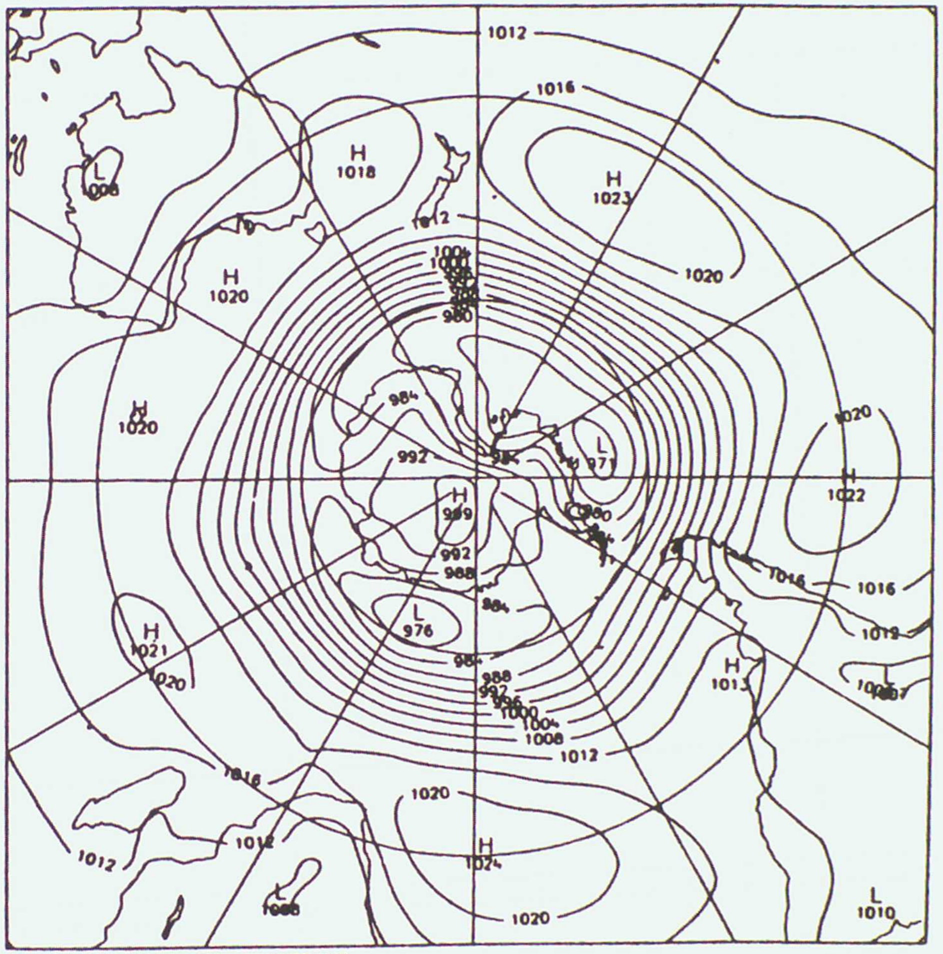
NOVEMBER
1989

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
PMSL
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
SEA LEVEL


1016
H
1024
1020
H
1023
1012
1008
L
1016
H
1022
H
1030
H
1033
1020
H
1019
L
1005
H
1012
1008
H
1022
L
1007
H
1019
H
1019
L
1007
H
1012
1012

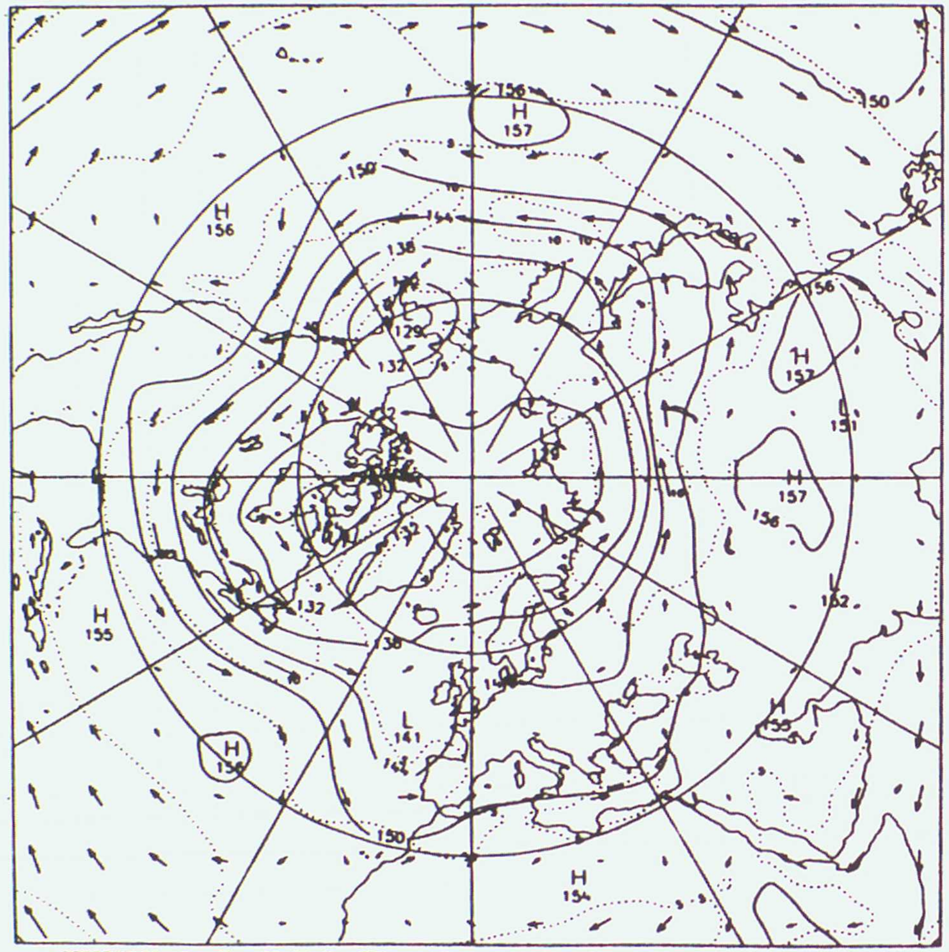
CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
PMSL
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
SEA LEVEL


1012
1016
L
1006
H
1018
H
1023
H
1020
1020
980
H
1020
984
992
L
971
1020
H
1022
H
989
992
988
L
976
1016
H
1021
1020
984
988
992
996
1000
1004
1008
1012
H
1013
1012
1016
1020
H
1024
1012
L
1008
1020
L
1010

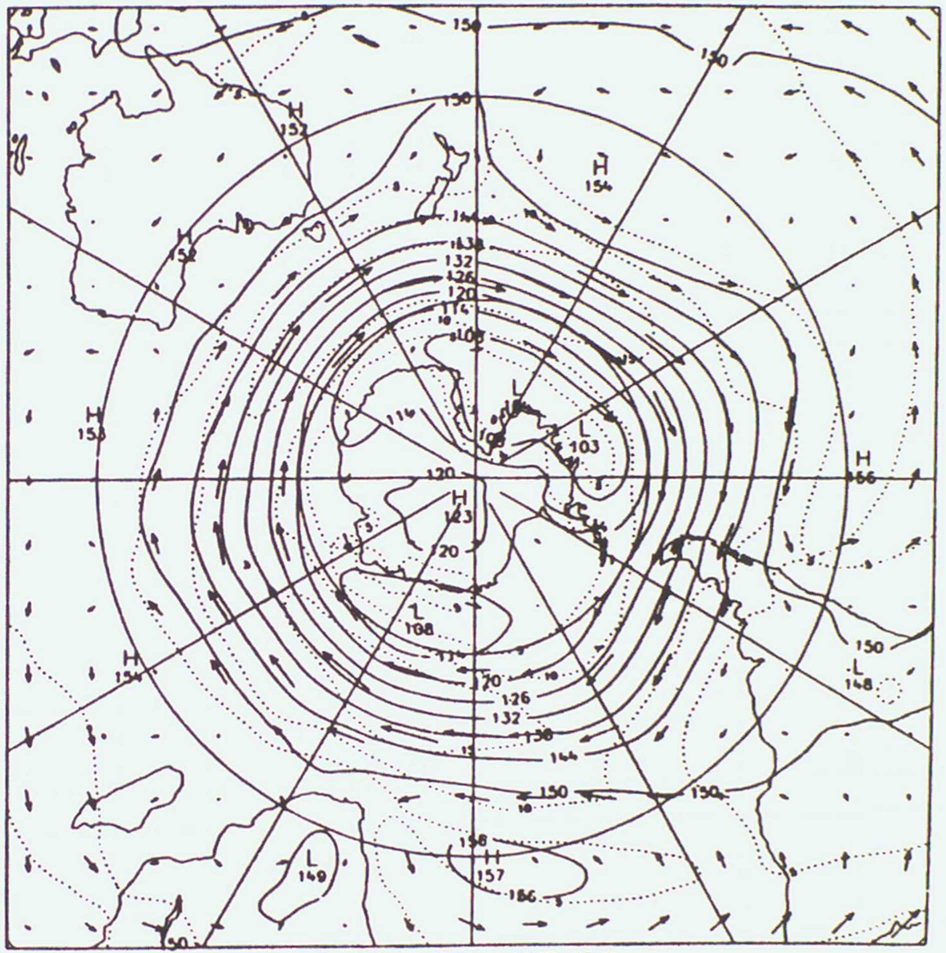
CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 850 MB


H
157
156
150
H
156
138
144
129
132
H
157
151
H
157
156
L
152
H
155
132
138
L
141
142
H
156
150
H
155
H
154

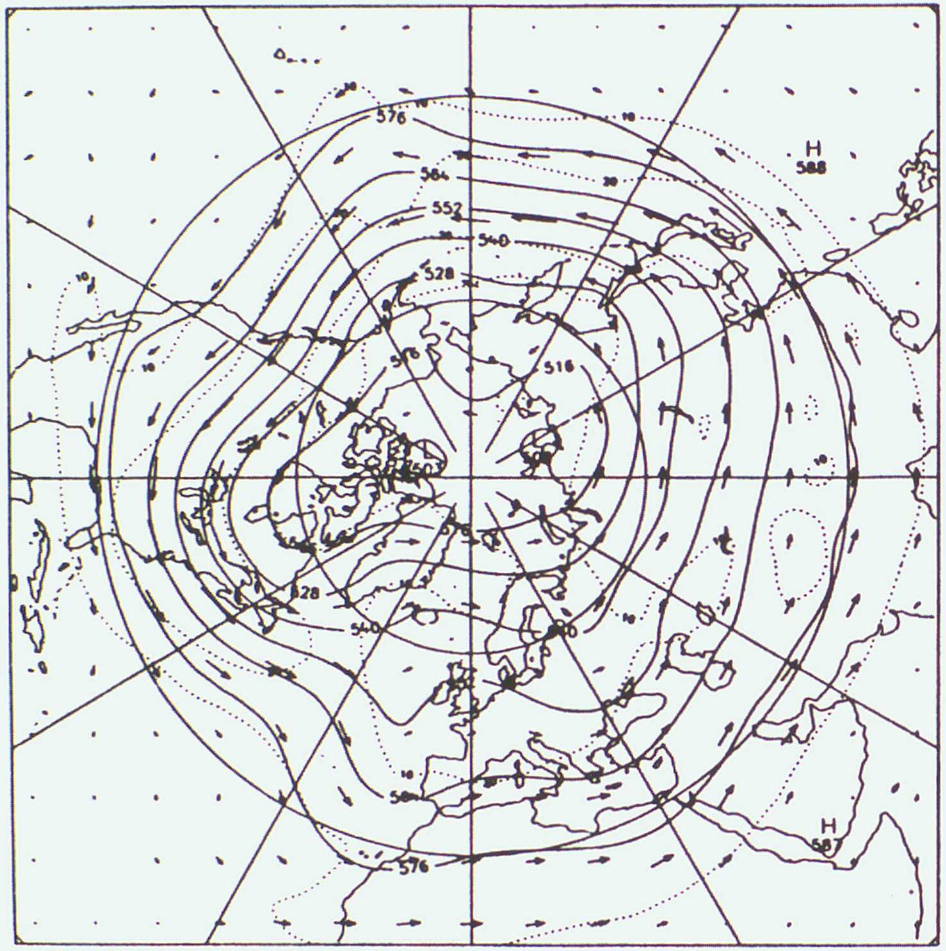
→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 850 MB


150
H
152
H
154
H
152
138
132
126
120
114
108
H
153
L
103
120
H
123
120
H
156
L
108
H
154
120
126
132
138
144
150
150
L
148
158
H
157
156
L
149
150

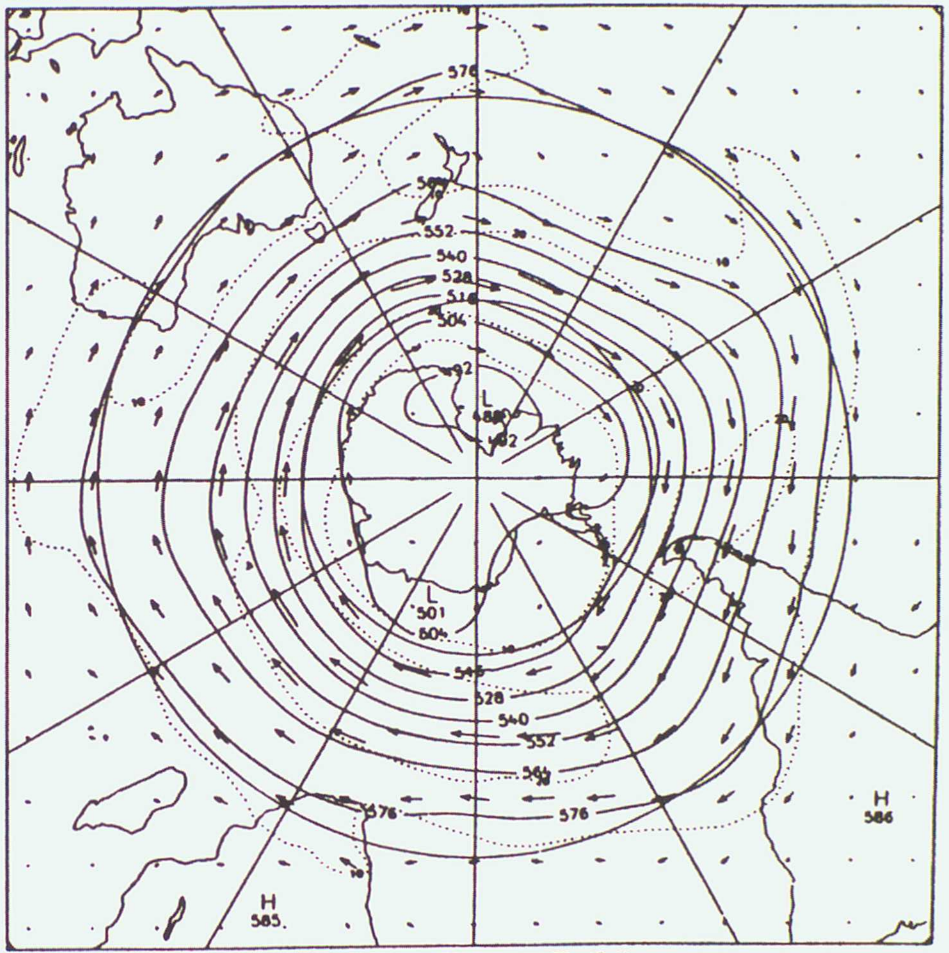
→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 500 MB


576
564
552
540
528
516
H
588
H
587
10
30

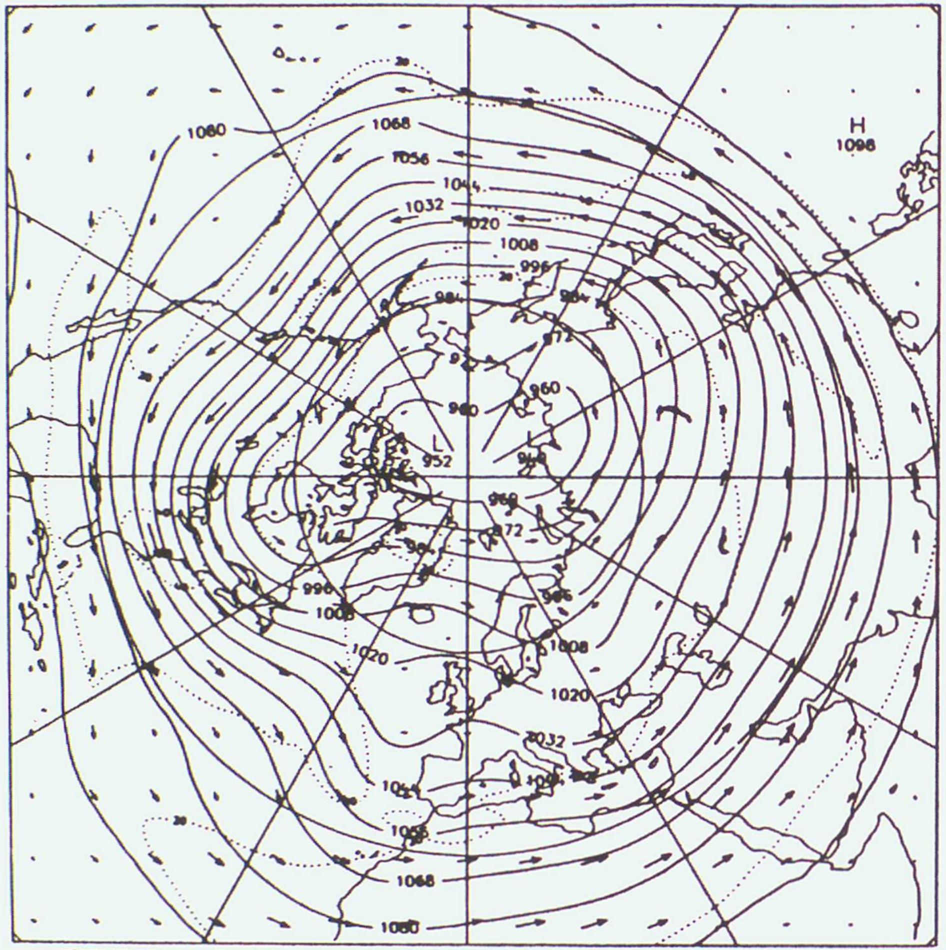
→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 500 MB


576
564
552
540
528
516
504
492
L
488
L
501
H
586
H
585
10
30

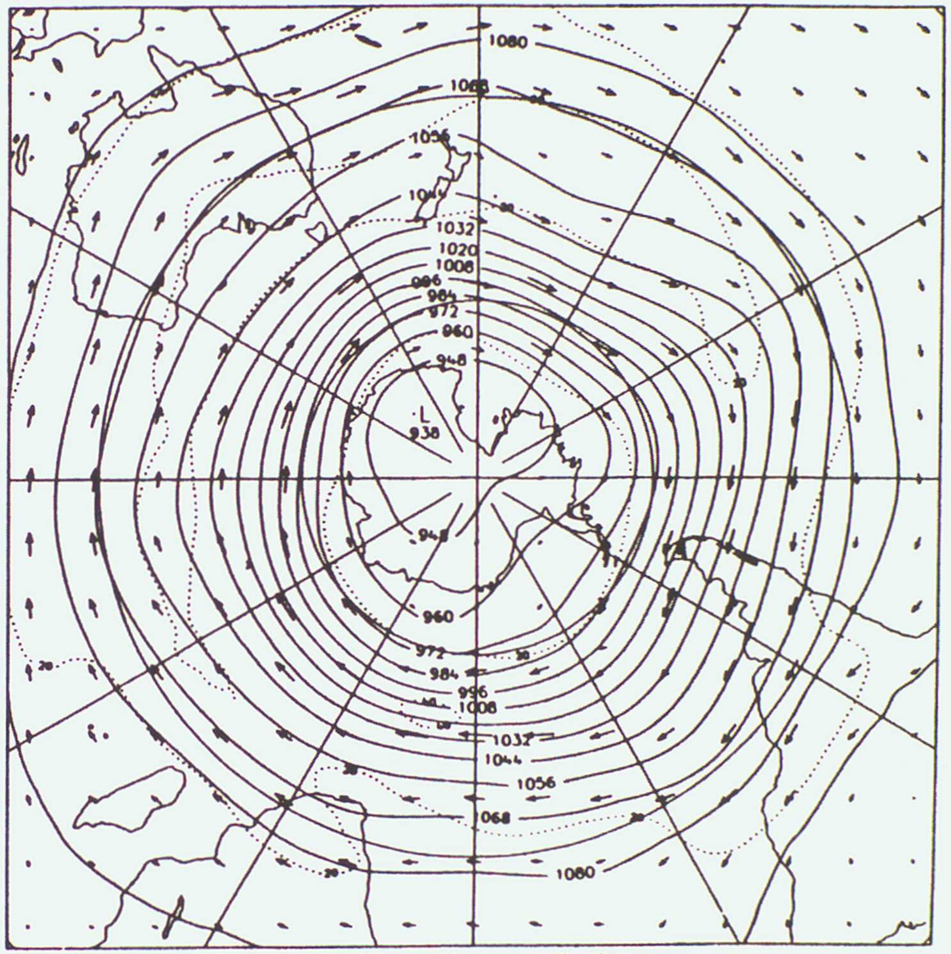
→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 250 MB


H
1096
1080
1068
1056
1044
1032
1020
1008
996
984
972
960
948
L
952
20

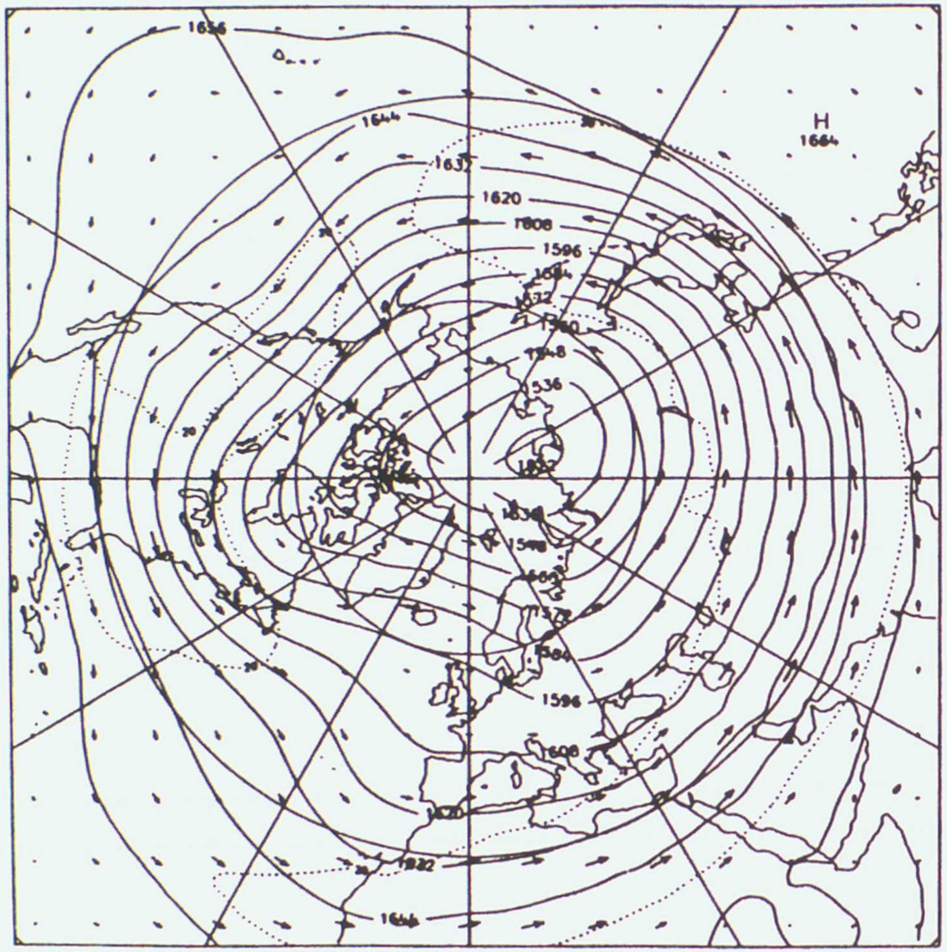
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 250 MB


1080
1068
1056
1044
1032
1020
1008
996
984
972
960
948
L
938
20

→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS.   NOVEMBER   1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 100 MB


1656
1644
H
1664
20
1632
1620
1608
1596
1584
1572
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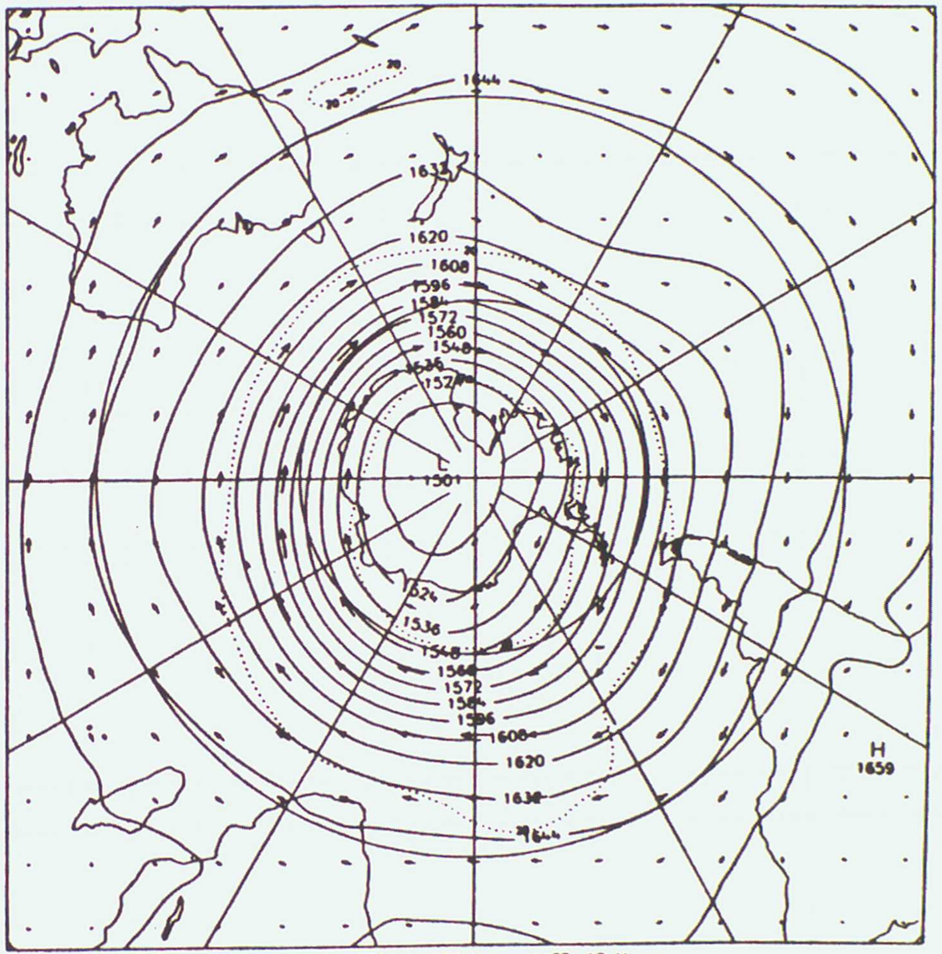
1548
1536
1532
1536
1548
1560
1572
1584
1596
1608
1620
1632
1644
20
20
20

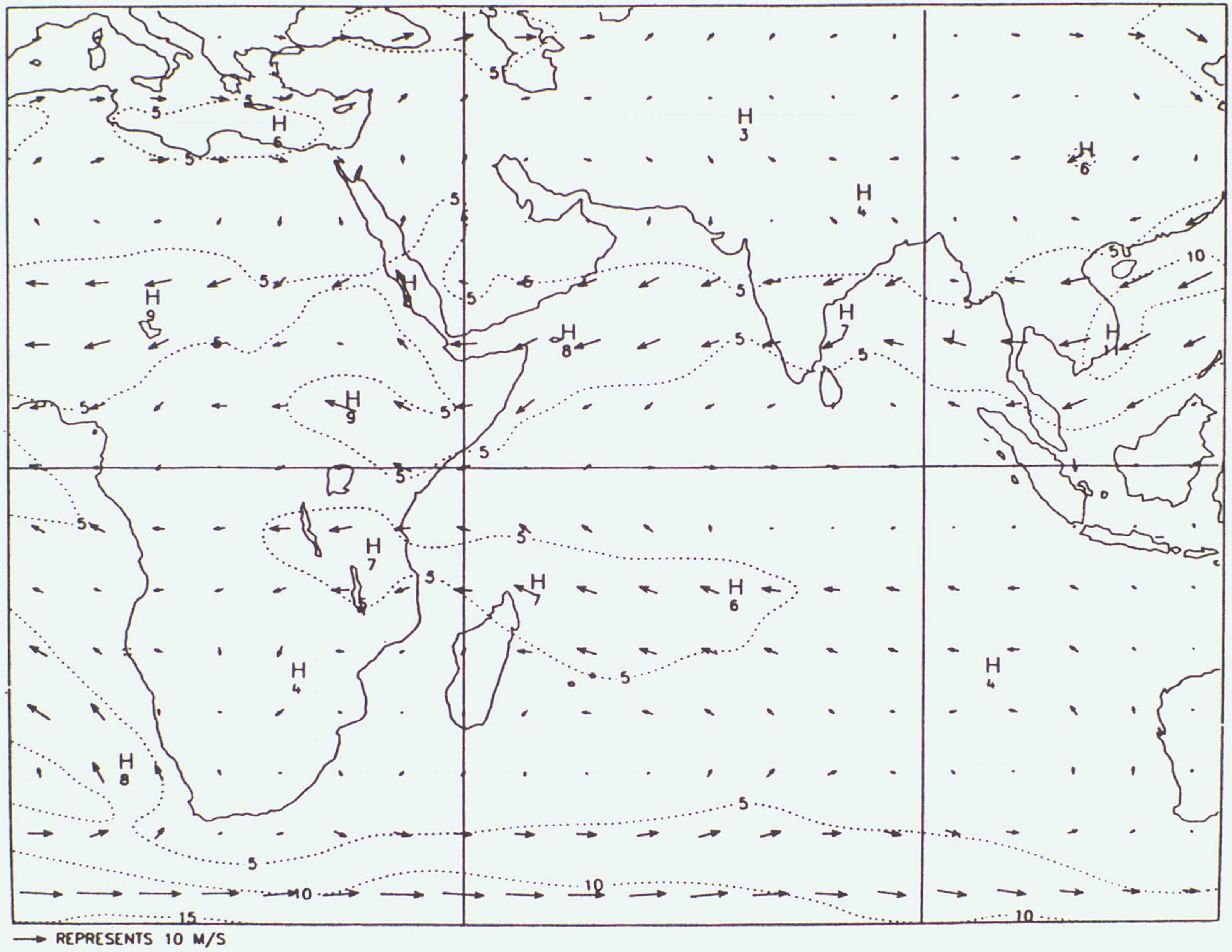
→ REPRESENTS 40 M/S   CONTOUR INTERVAL: 120 M   UNITS: 10 M

OPERATIONAL ARCHIVE MEANS.   NOVEMBER   1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 100 MB

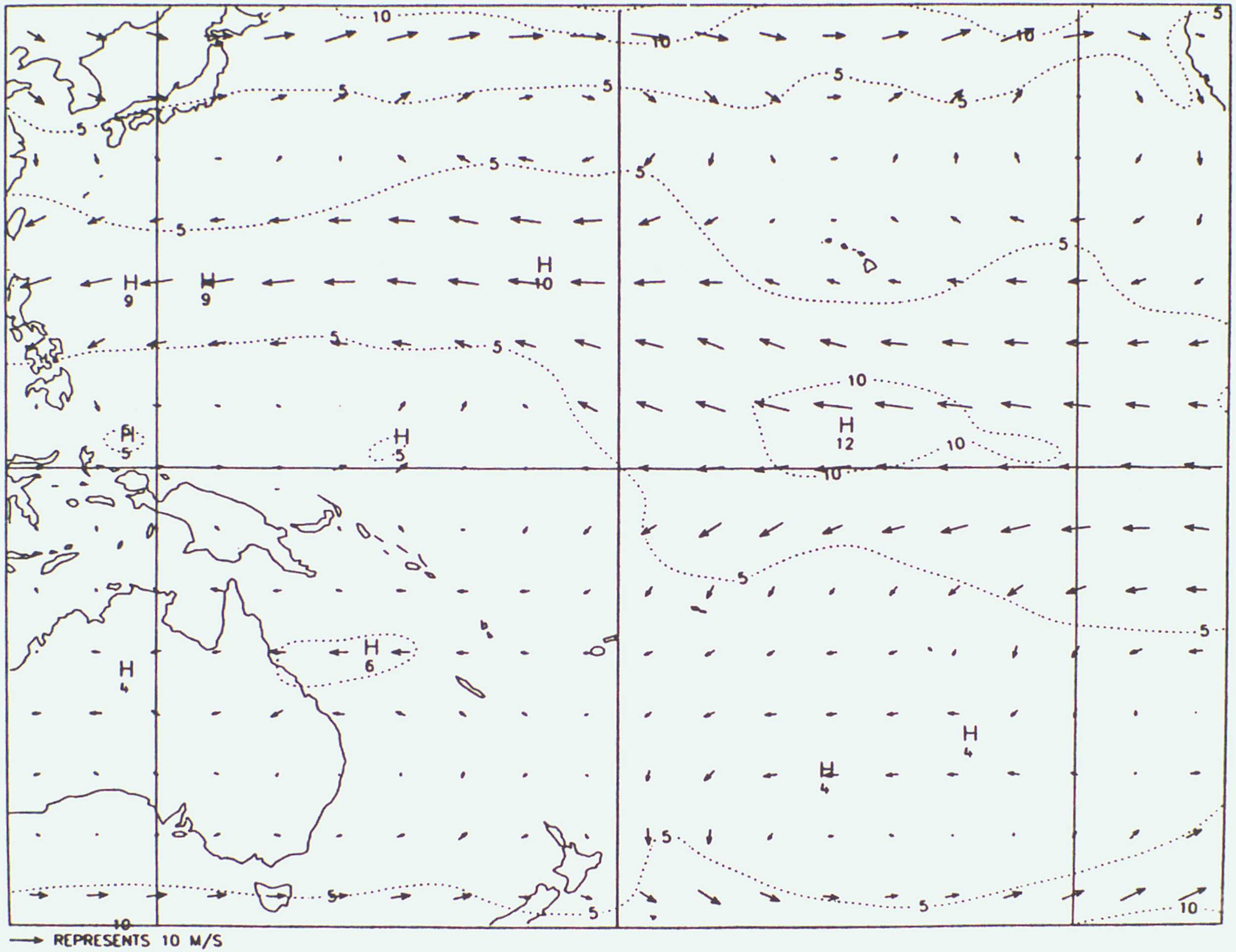

1644
20
20
1632
1620
1608
1596
1584
1572
1560
1548
1536
1527
L
1501
1524
1536
1548
1560
1572
1584
1596
1608
1620
1632
1644
H
1659

→ REPRESENTS 40 M/S   CONTOUR INTERVAL: 120 M   UNITS: 10 M

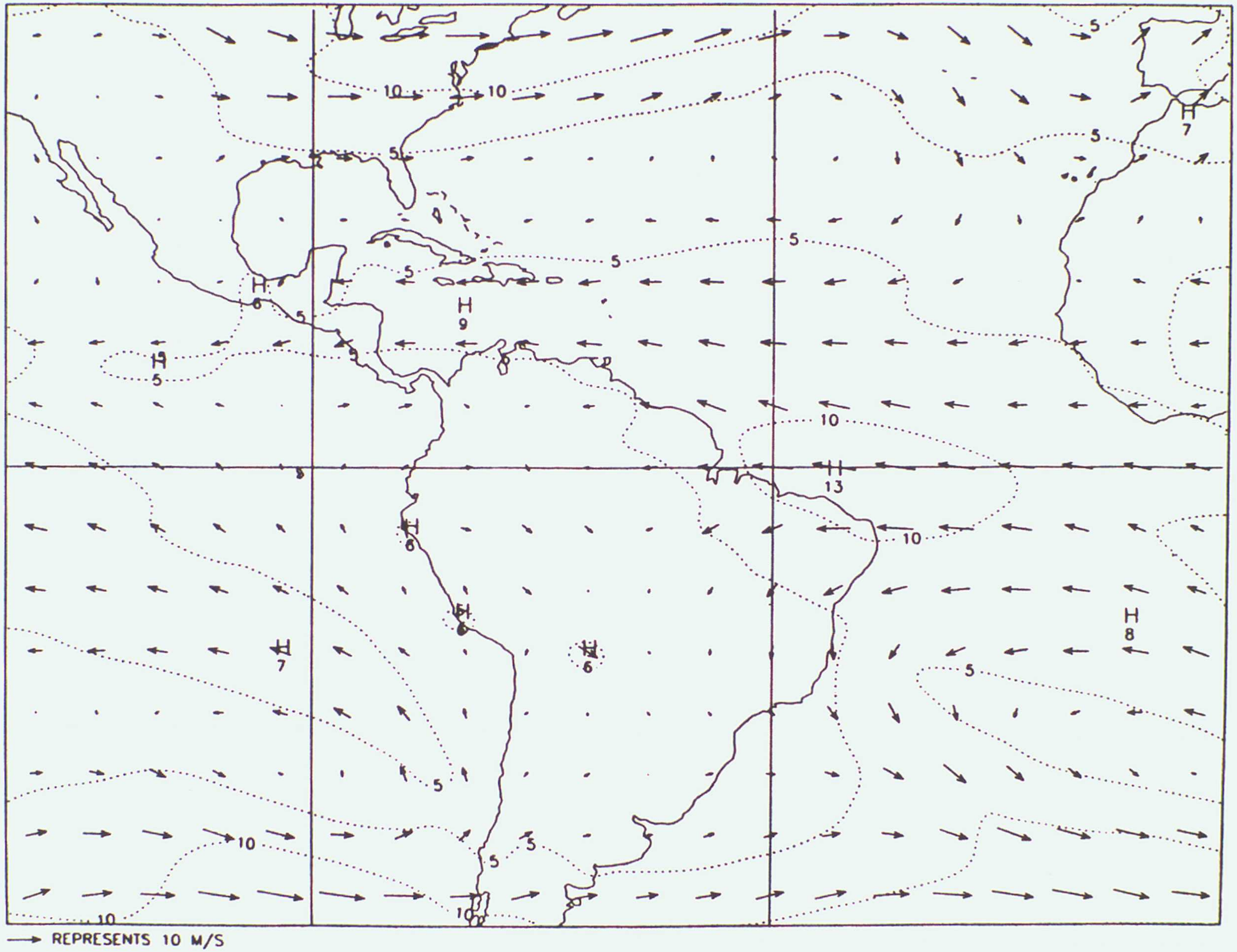
OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
850 MBS. BETWEEN LONGS. 0 E - 120 E


H 3
H 4
H 6
H 7
H 8
H 9
5
10
15
→ REPRESENTS 10 M/S

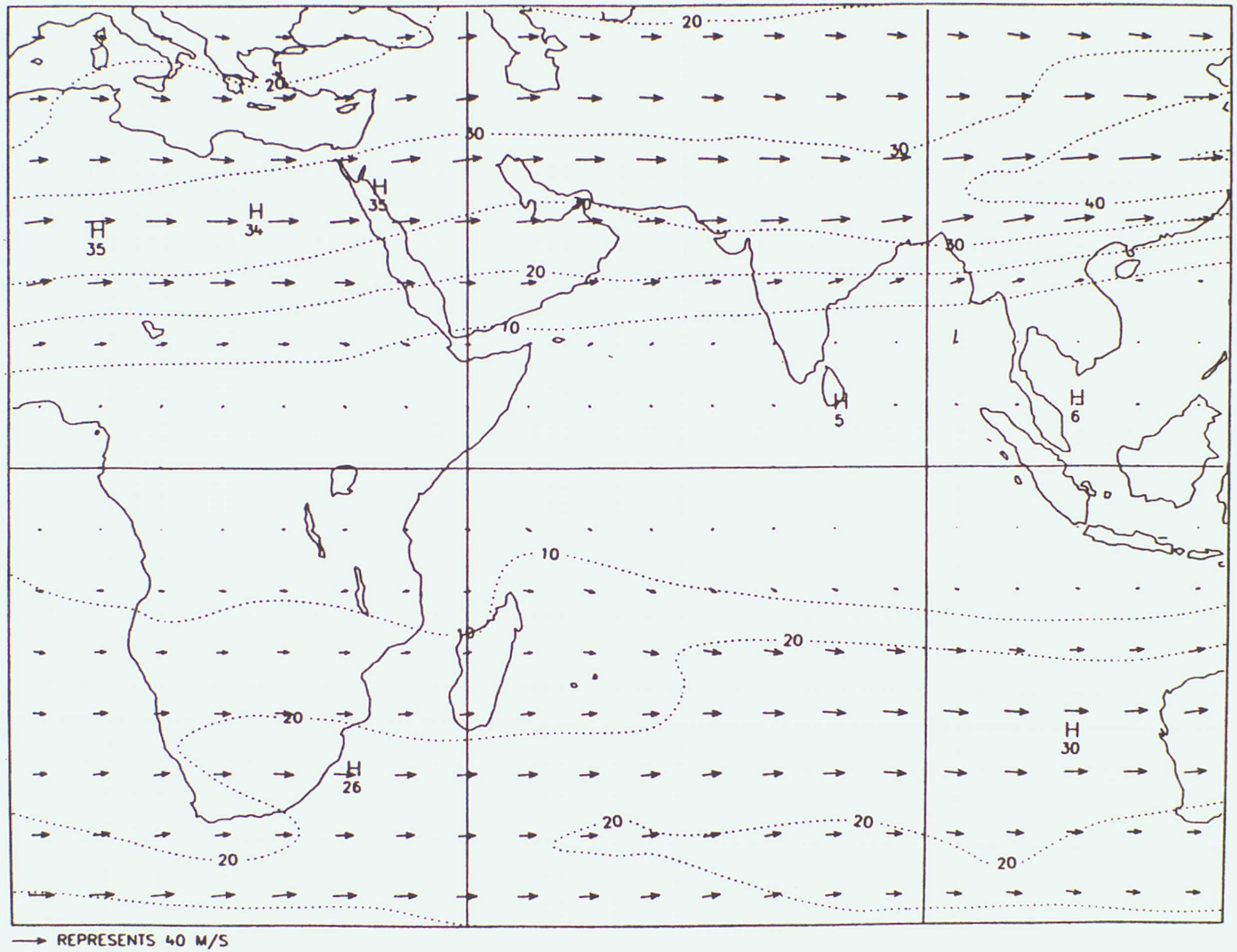
OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
850 MBS. BETWEEN LONGS. 120 E - 120 W


10
5
H
9
H
10
H
12
H
5
H
6
H
4
→ REPRESENTS 10 M/S

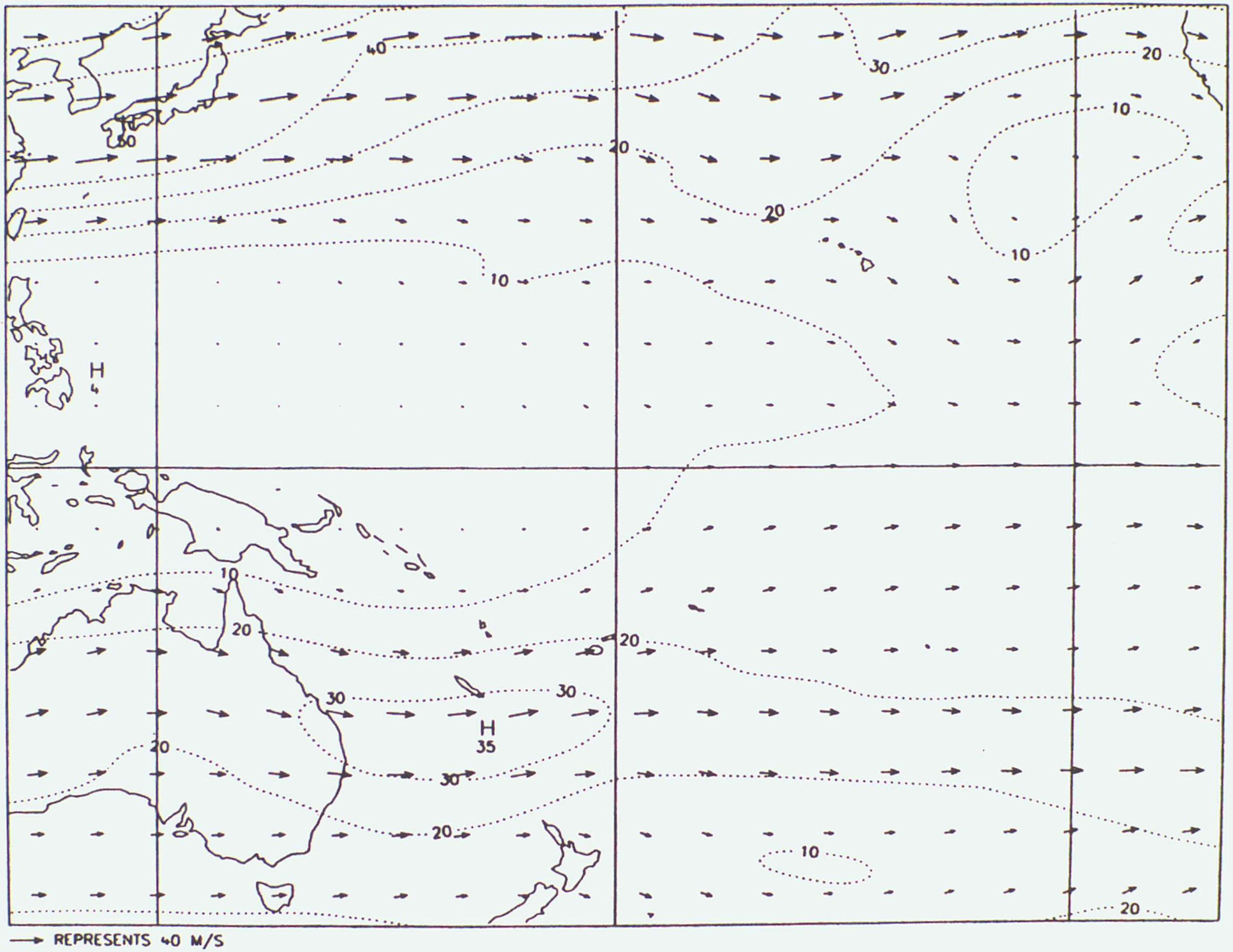
OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
850 MBS. BETWEEN LONGS. 120 W - 0 W


H
7
H
6
H
9
H
5
H
13
H
6
H
6
H
6
H
7
H
8
5
10
→ REPRESENTS 10 M/S

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
250 MBS. BETWEEN LONGS. 0 E - 120 E


20
20
30
30
30
40
H 35
H 34
H 35
30
30
20
10
L
H 5
H 6
10
10
20
20
H 26
H 30
20
20
20
20
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
250 MBS. BETWEEN LONGS. 120 E - 120 W


40
50
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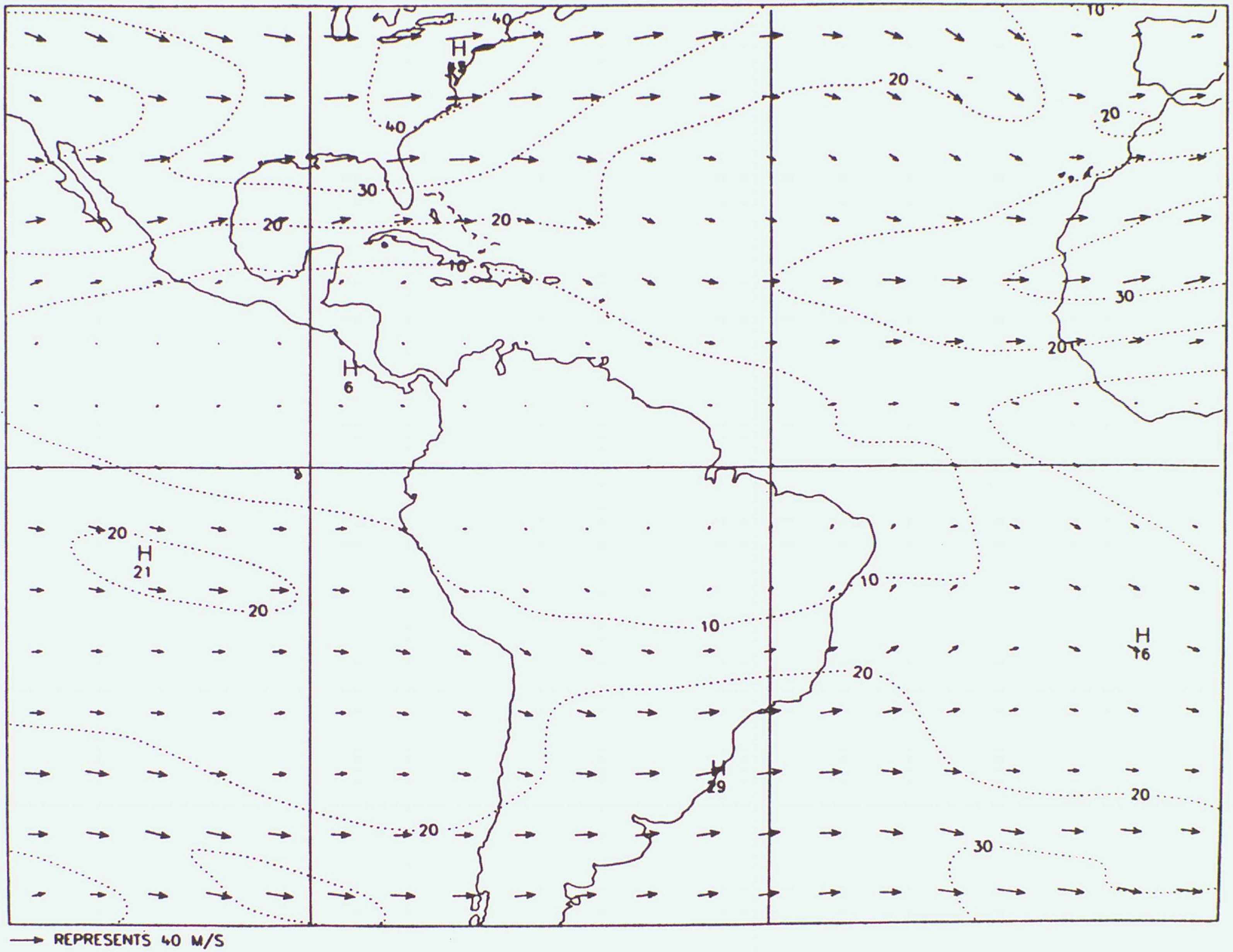
20
10
20
10
10
H
4
10
20
20
30
30
H
35
20
30
20
10
20
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. NOVEMBER 1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/11/1989 DAY 305 TO 12Z ON 30/11/1989 DAY 334
250 MBS. BETWEEN LONGS. 120 W - 0 W


10
40
H
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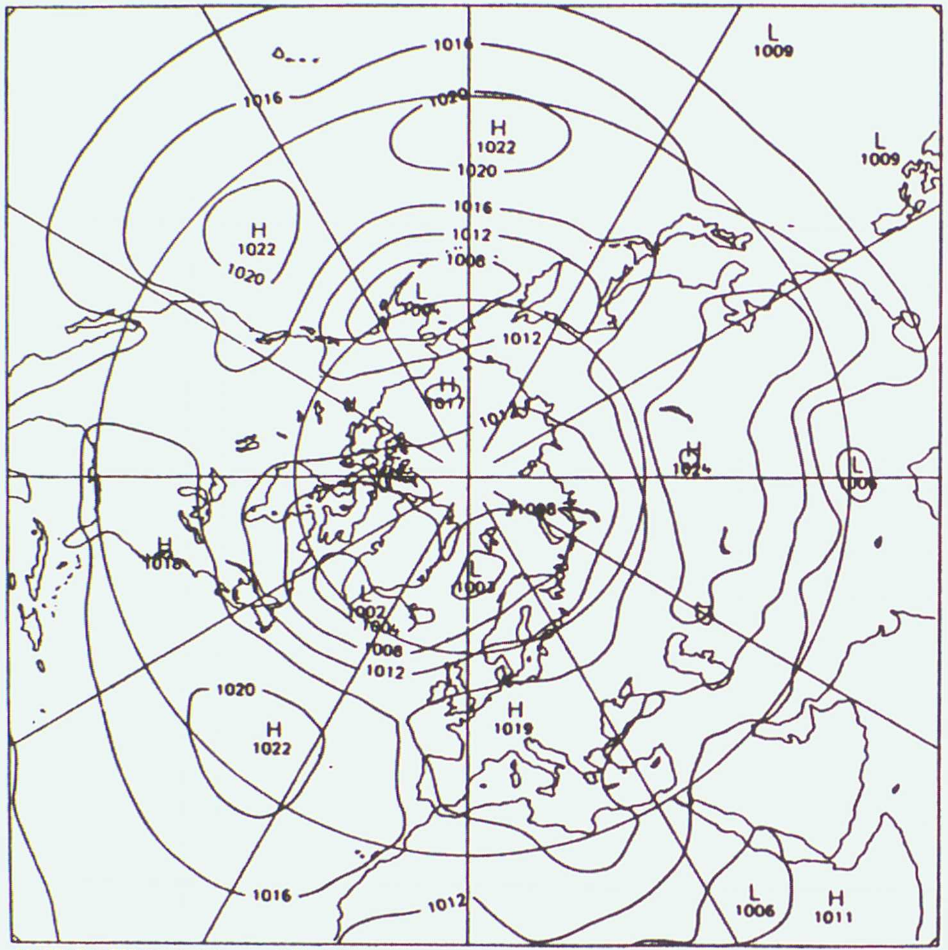
20
20
10
H
6
20
20
30
20
20
10
H
21
20
10
H
16
20
20
H
29
20
30
→ REPRESENTS 40 M/S

SEPTEMBER/OCTOBER/NOVEMBER
1989

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
PMSL
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
SEA LEVEL


1016
L
1009
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1020
H
1022
1020
L
1009
H
1022
1020
1016
1012
1008
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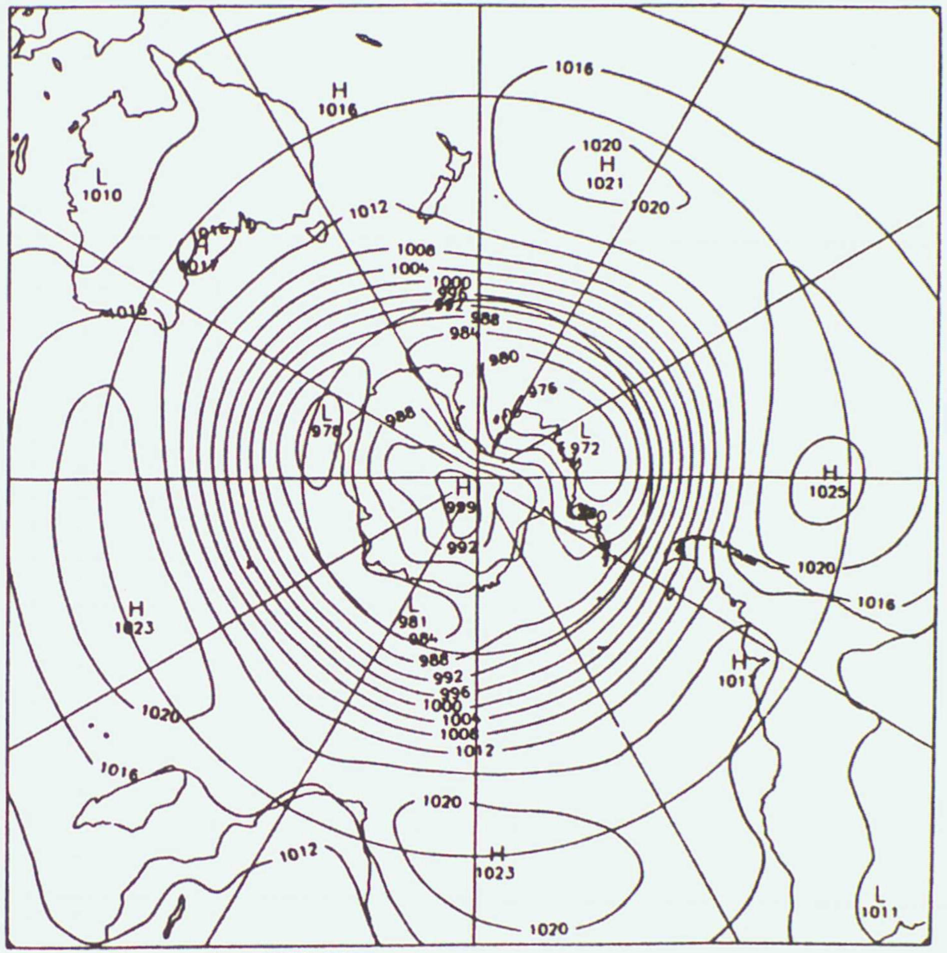
1004
1012
H
1017
H
1024
L
1006
H
1018
L
1003
1002
1004
1008
1012
1020
H
1022
H
1019
1016
1012
L
1006
H
1011

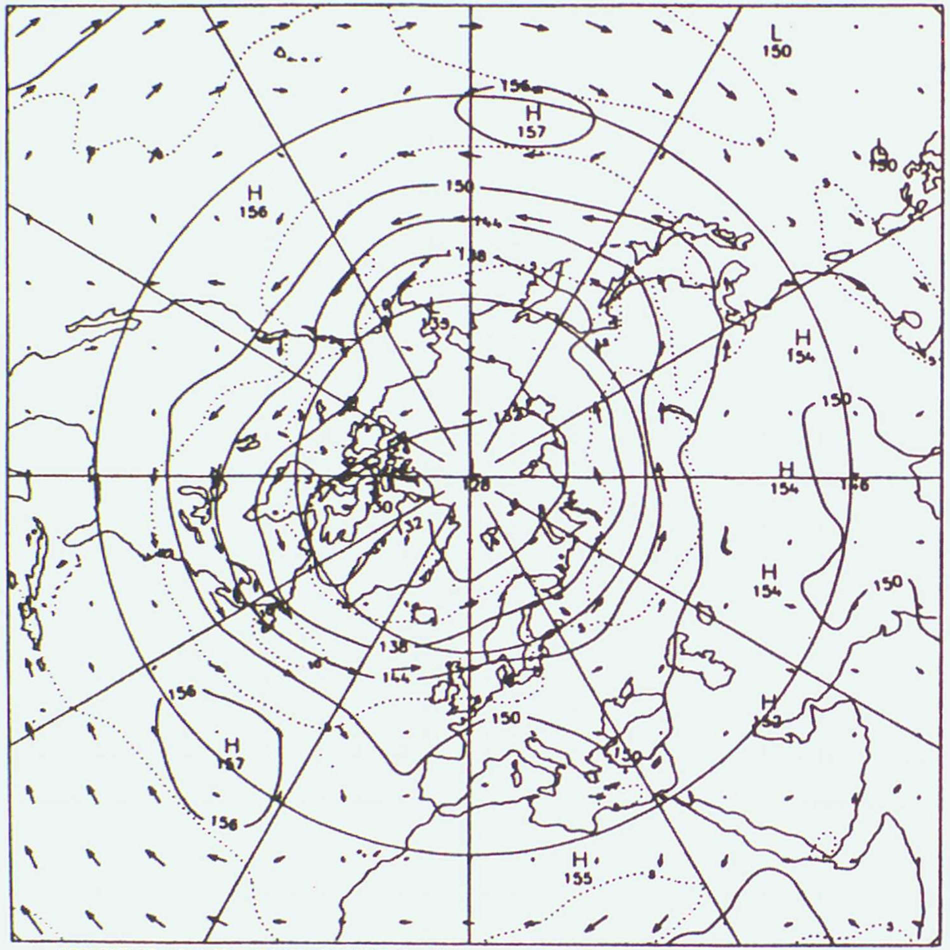
CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
PMSL
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
SEA LEVEL


H
1016
1016
1020
H
1021
1020
L
1010
1012
H
1017
1008
1004
1000
996
992
988
984
980
976
L
976
988
L
972
H
999
H
1025
992
1020
1016
H
1023
L
981
984
988
992
996
1000
1004
1008
1012
H
1011
1020
1016
1020
1012
H
1023
1020
L
1011

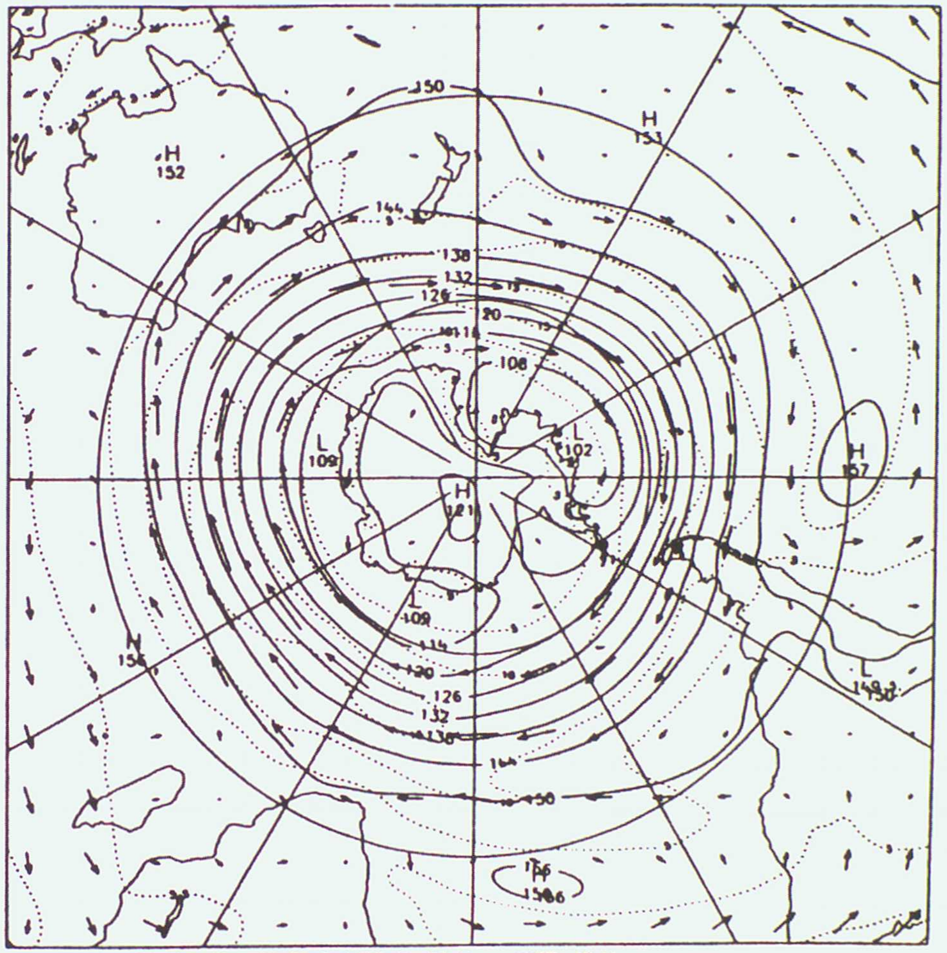
CONTOUR INTERVAL: 4 MB UNITS: MB

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 850 MB


L
150
H
157
156
H
156
150
144
138
H
154
150
132
128
130
132
H
154
146
H
154
150
138
144
156
H
157
156
150
H
152
150
H
155

→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 850 MB


150
H
153
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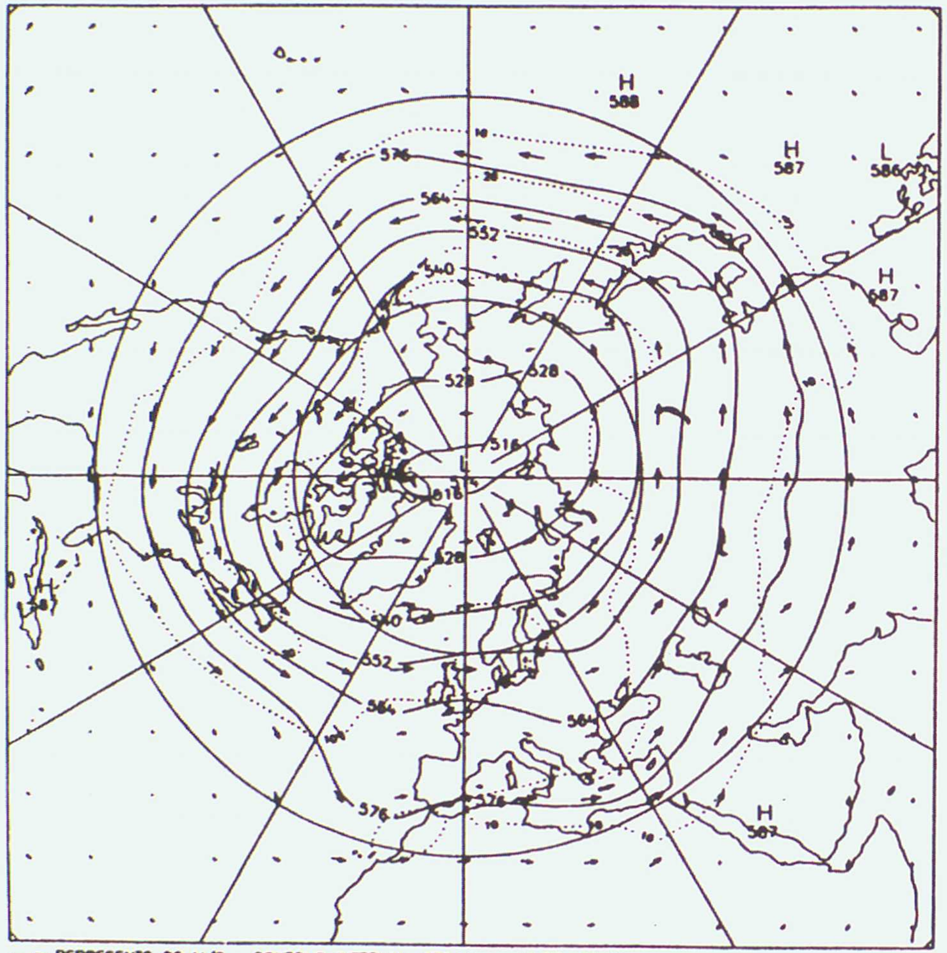
152
144
138
132
126
108
L
102
L
109
H
121
H
157
L
109
114
120
126
132
138
144
150
H
156
L
149
150
156

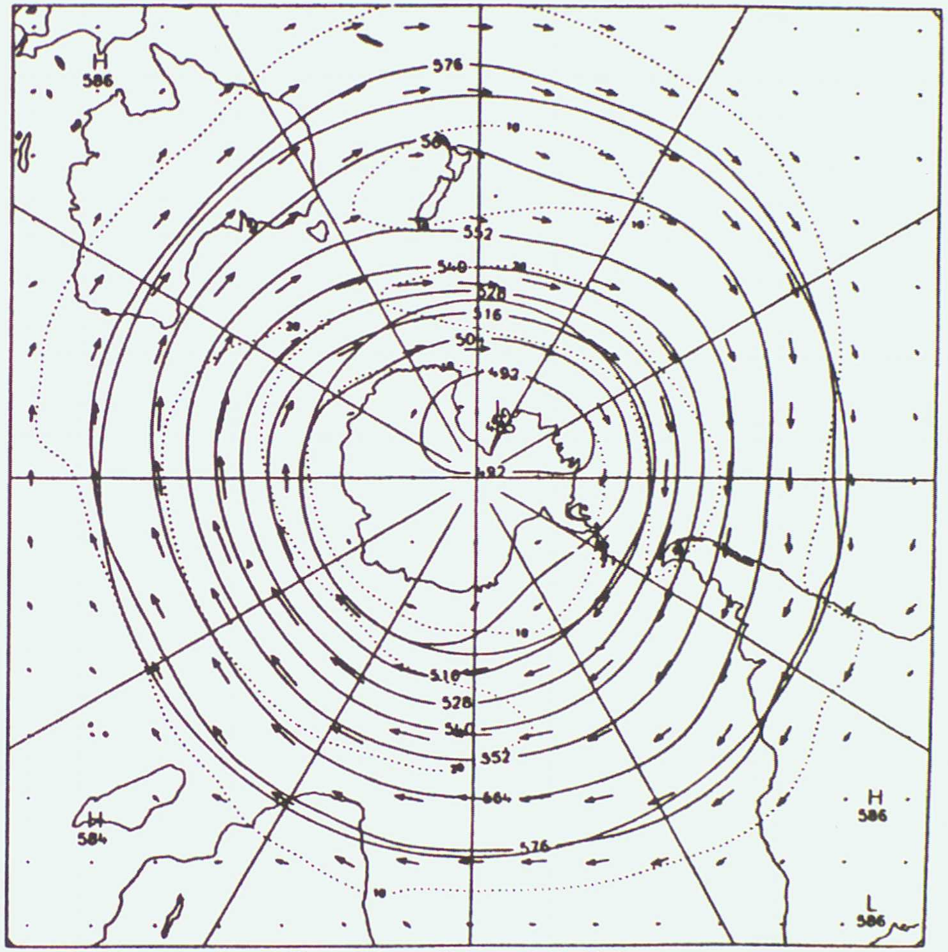
→ REPRESENTS 10 M/S CONTOUR INTERVAL: 60 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 500 MB


H 588
H 587
L 586
H 587
576
564
552
540
528
528
516
L 518
528
540
552
564
576
576
H 587
10
20

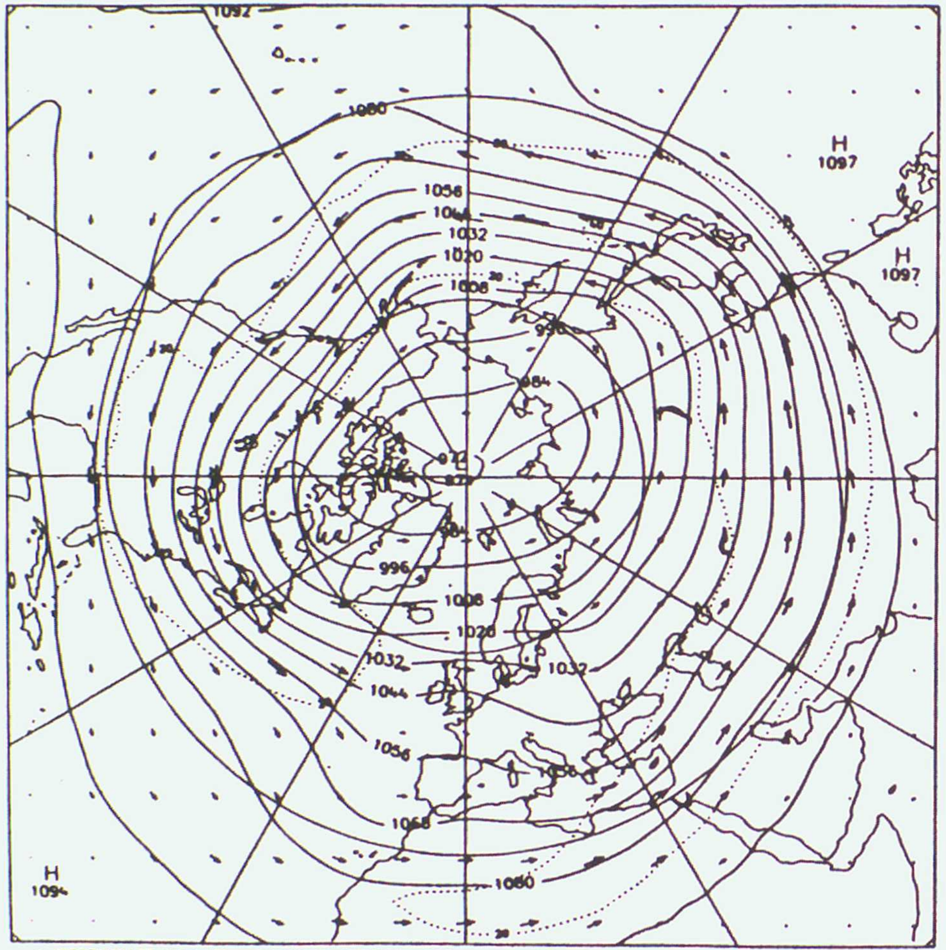
→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 500 MB


H 586
576
564
552
540
528
516
504
492
L 482
492
516
528
540
552
564
576
H 584
H 586
L 586
10
20

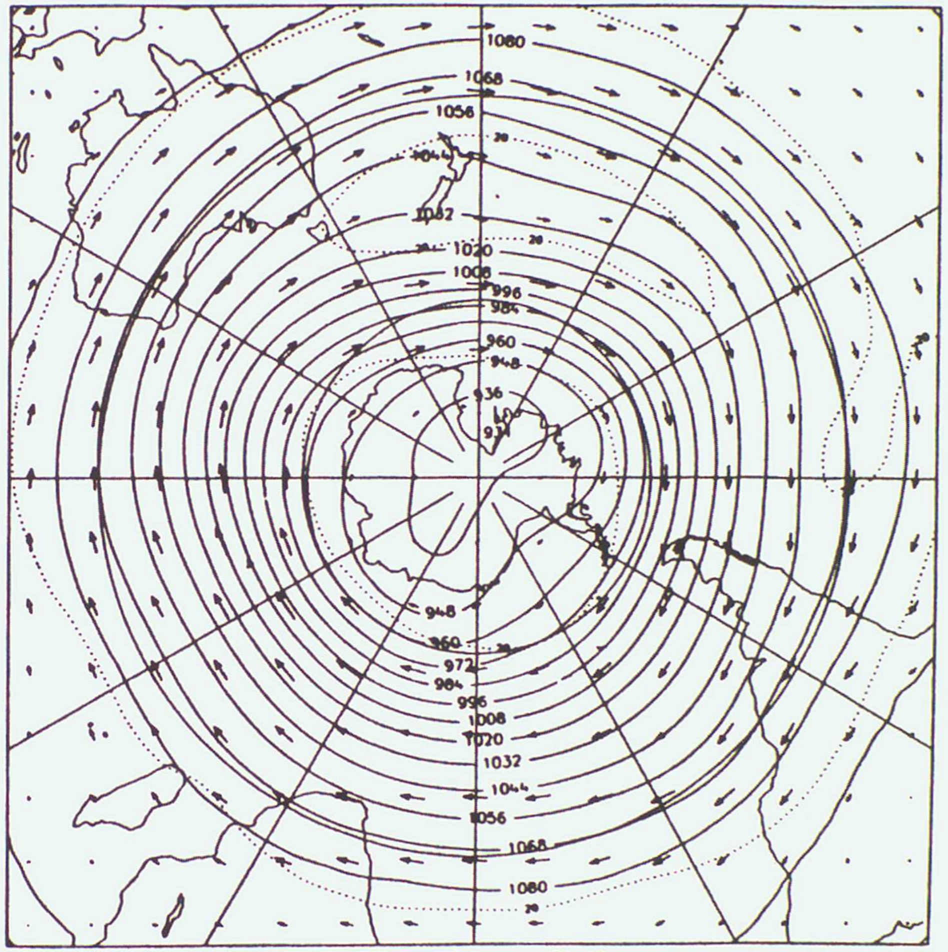
→ REPRESENTS 20 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 250 MB


1092
1080
1056
1044
1032
1020
1008
996
984
972
H
1097
H
1097
H
1094
20
1068

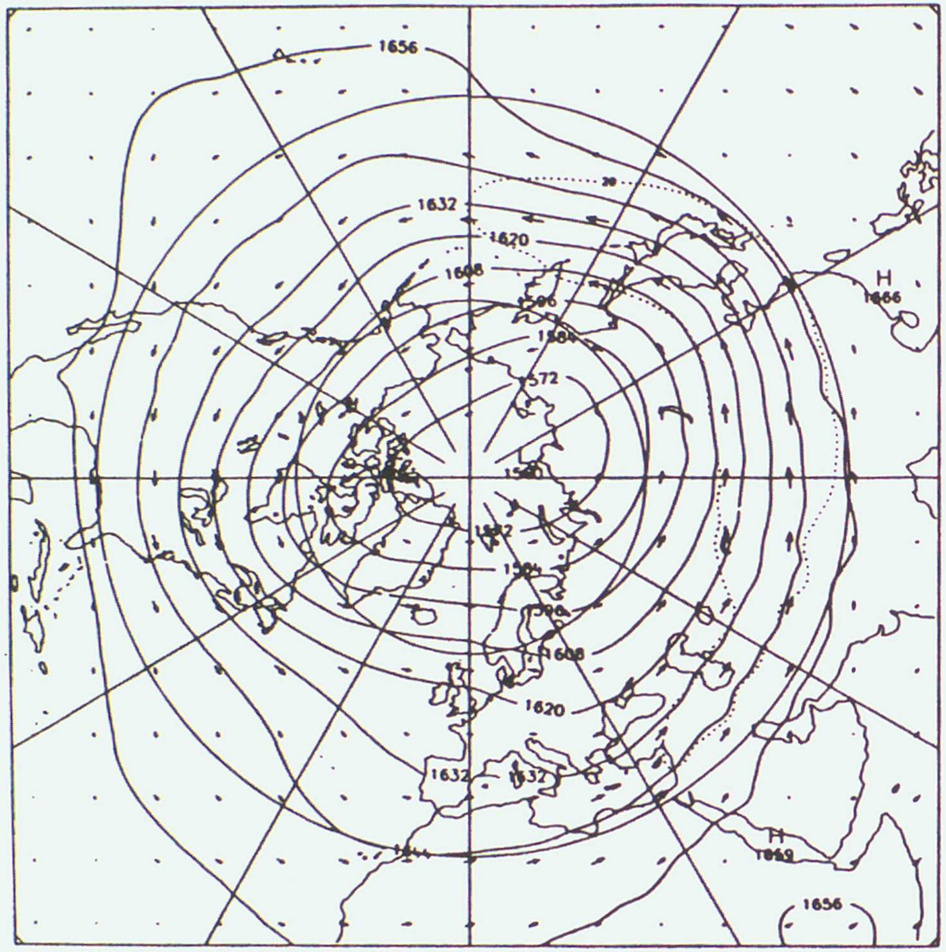
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 250 MB


1080
1068
1056
1044
1032
1020
1008
996
984
960
948
936
924
972
20

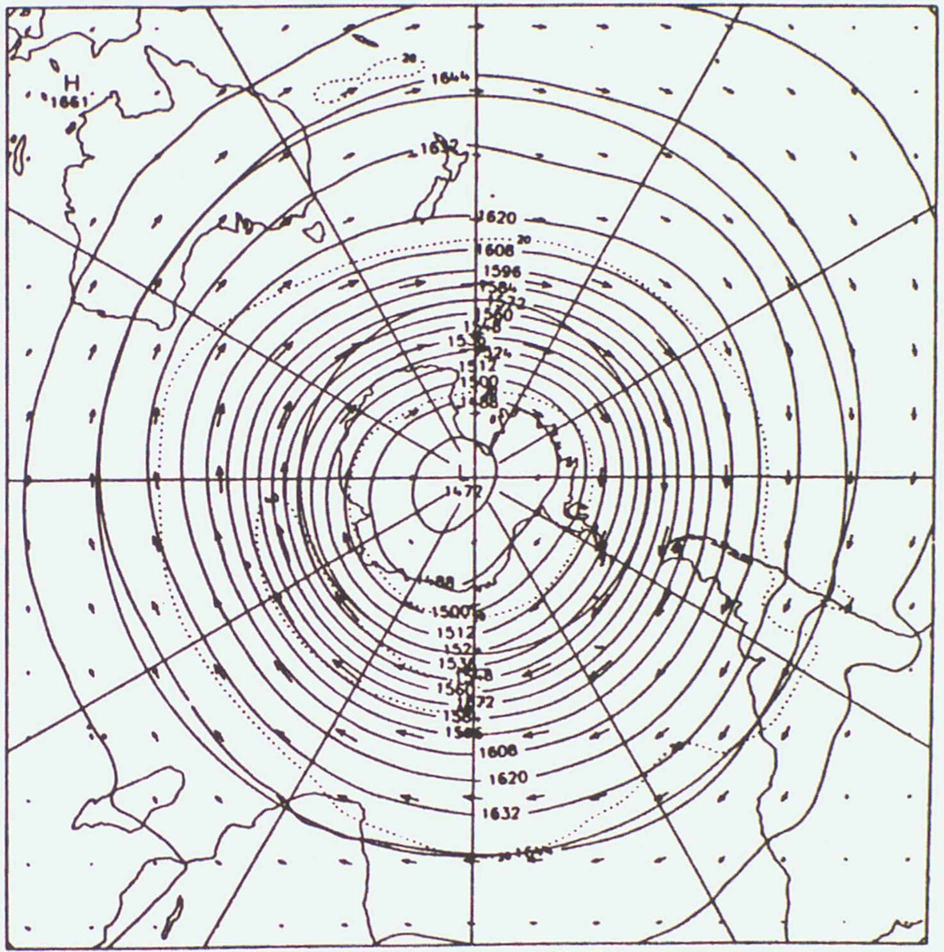
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 100 MB


1656
20
1632
1620
1608
1596
1584
1572
1560
1572
1584
1596
1608
1620
1632
1632
1644
H
1666
H
1669
1656

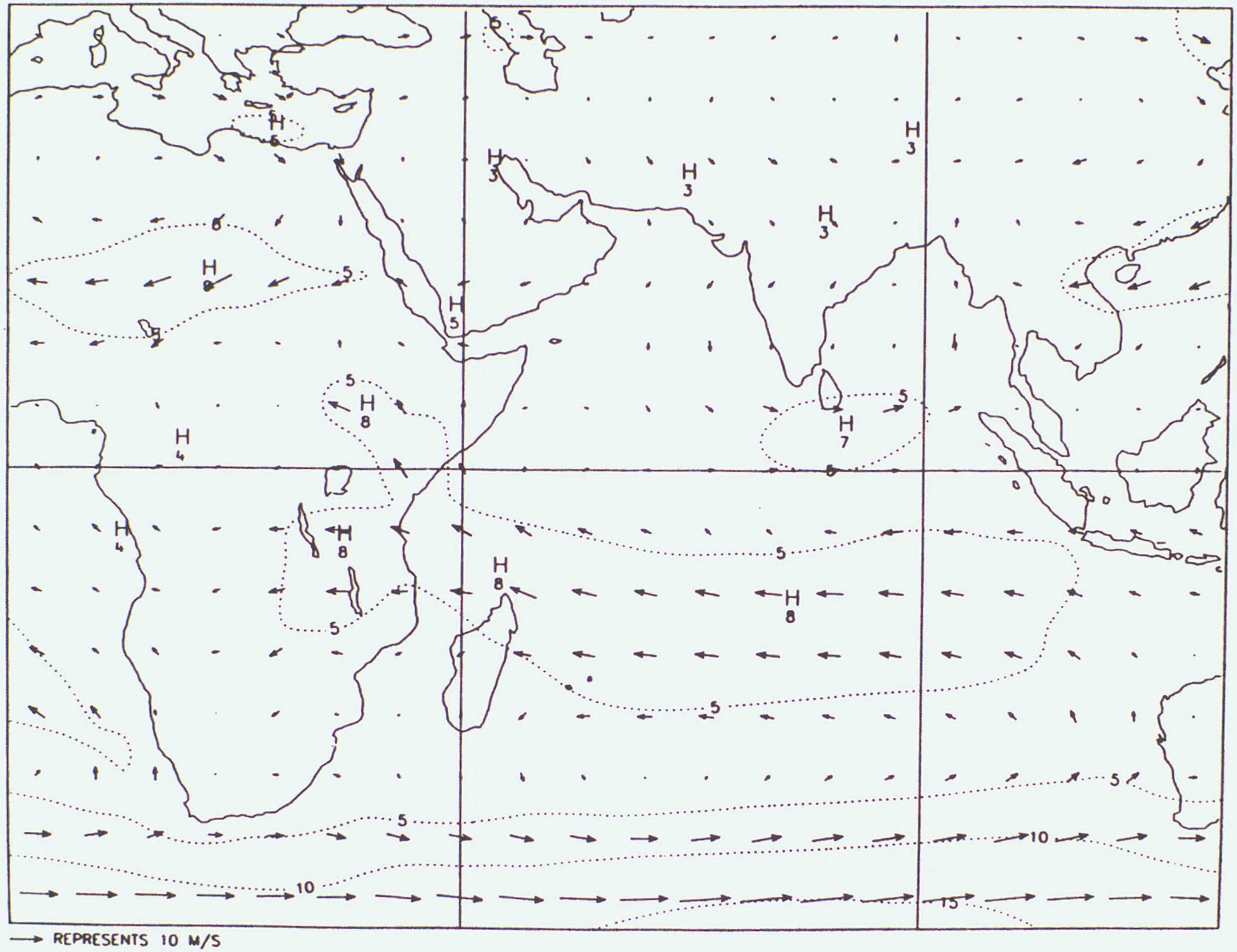
→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
HEIGHTS, WIND ARROWS AND ISOTACHS.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
LEVEL: 100 MB

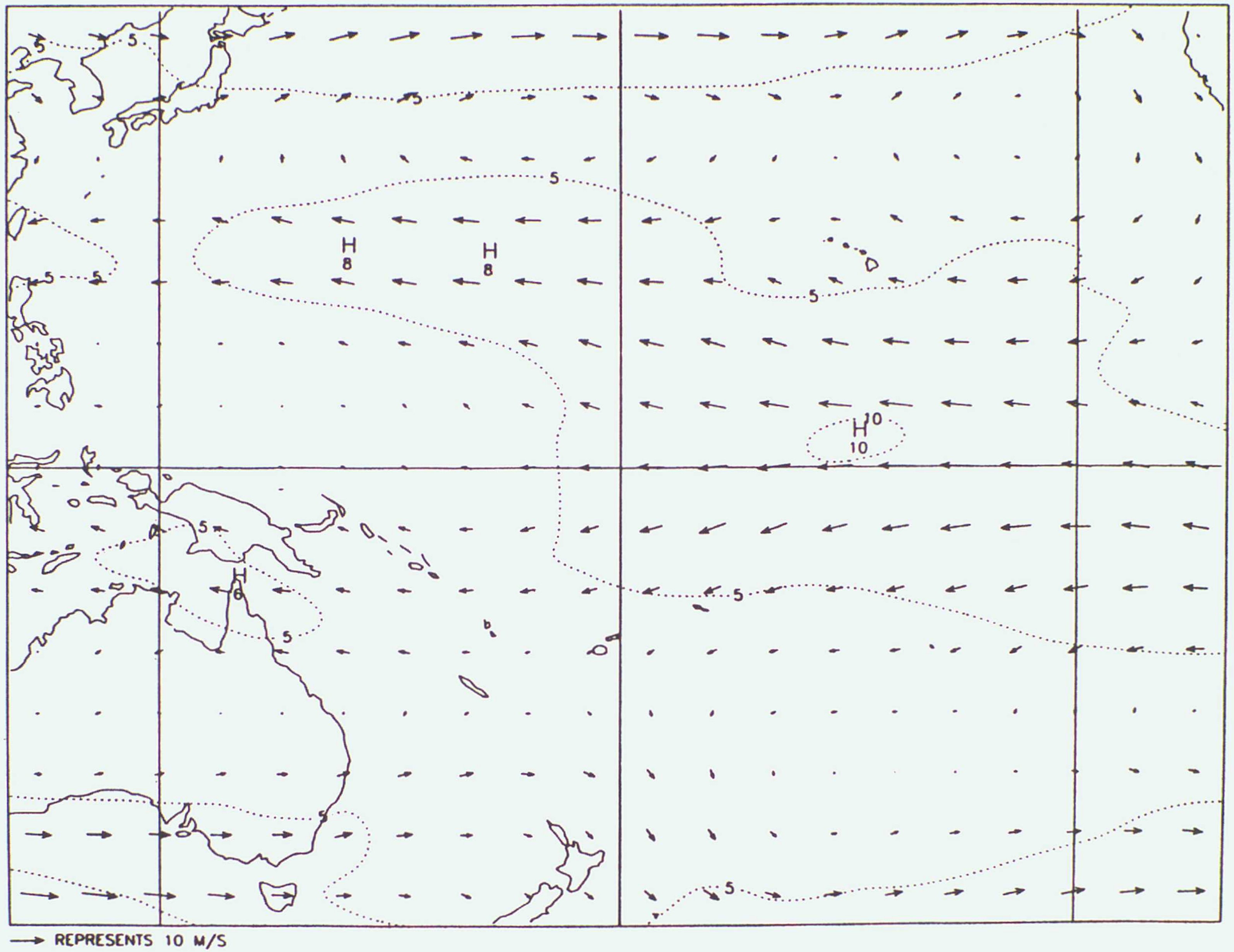

H
1661
20
1644
1632
1620
20
1608
1596
1584
1572
1560
1548
1536
1524
1512
1500
1488
1472
1488
1500
1512
1524
1536
1548
1560
1572
1584
1596
1608
1620
1632
1644
20

→ REPRESENTS 40 M/S CONTOUR INTERVAL: 120 M UNITS: 10 M

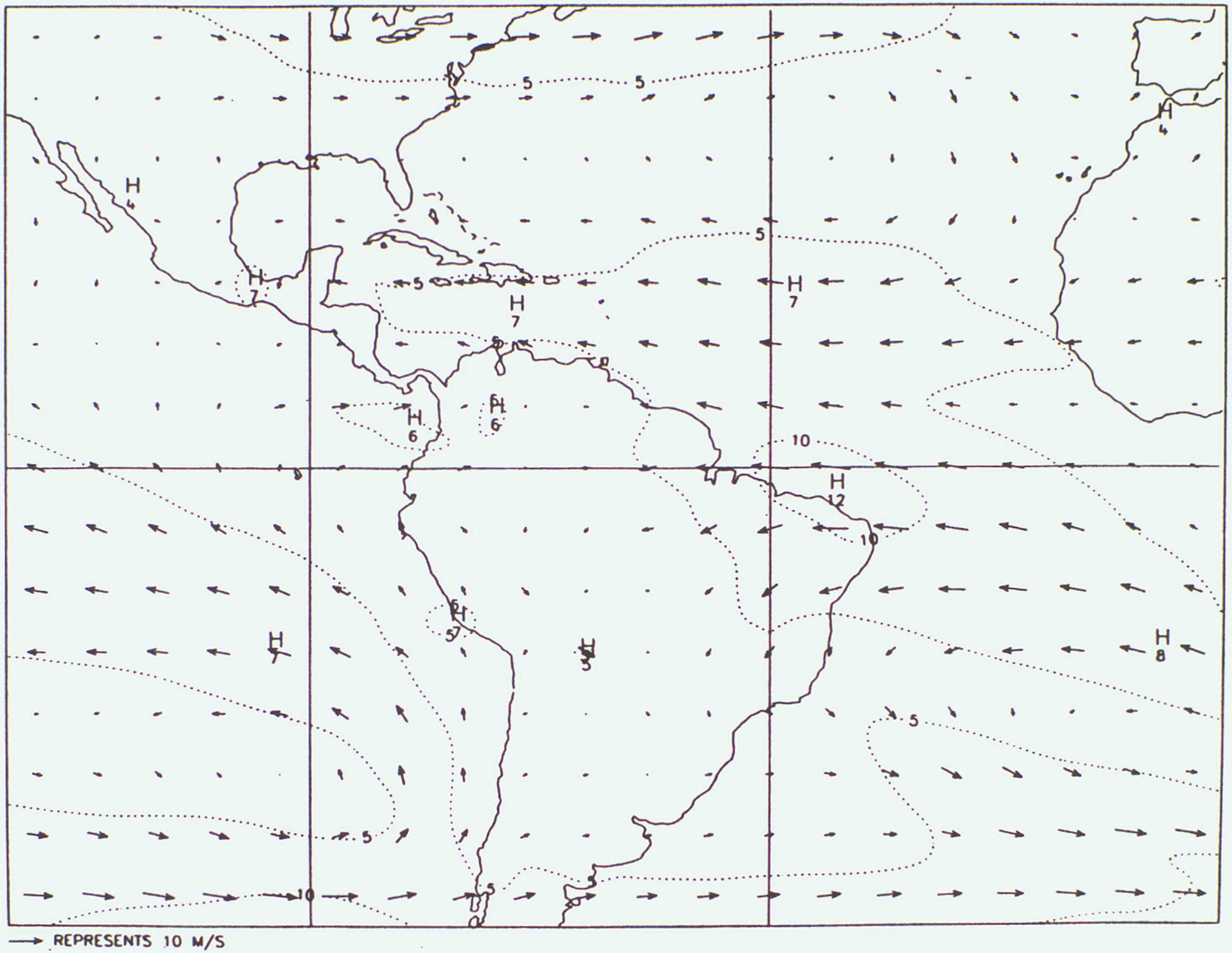
OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
850 MBS. BETWEEN LONGS. 0 E - 120 E


H 3
H 3
H 3
H 3
H 5
H 5
H 6
H 7
H 8
H 8
H 8
H 8
H 4
H 4
5
10
15
REPRESENTS 10 M/S

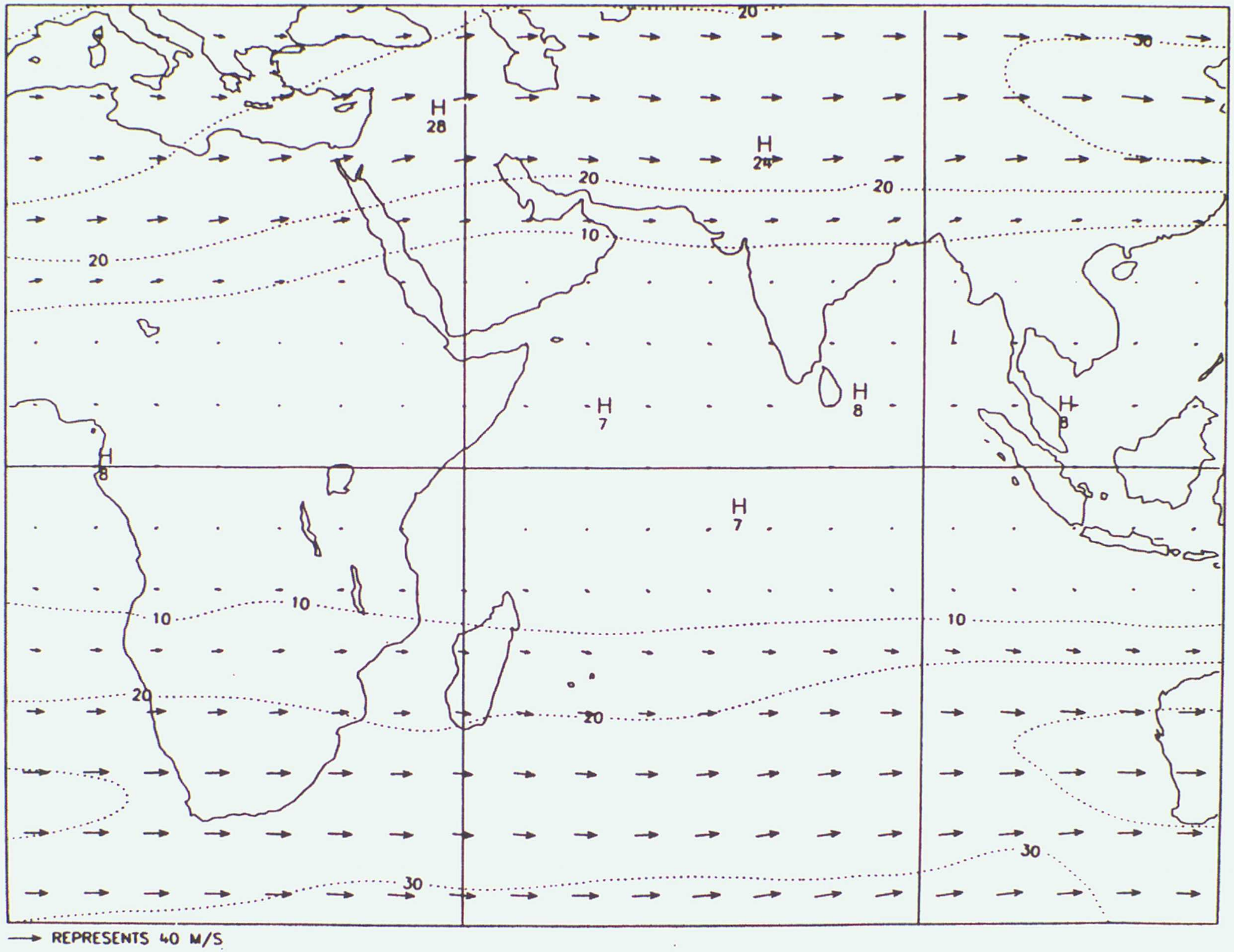
OPERATIONAL ARCHIVE MEANS.   SEP/OCT/NOV1989
WIND ARROWS AND ISOTACHS   BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM   0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
850 MBS.   BETWEEN LONGS. 120 E - 120 W


5
5
5
5
5
H
8
H
8
5
H
10
10
5
H
6
5
5
5
5
5
→ REPRESENTS 10 M/S

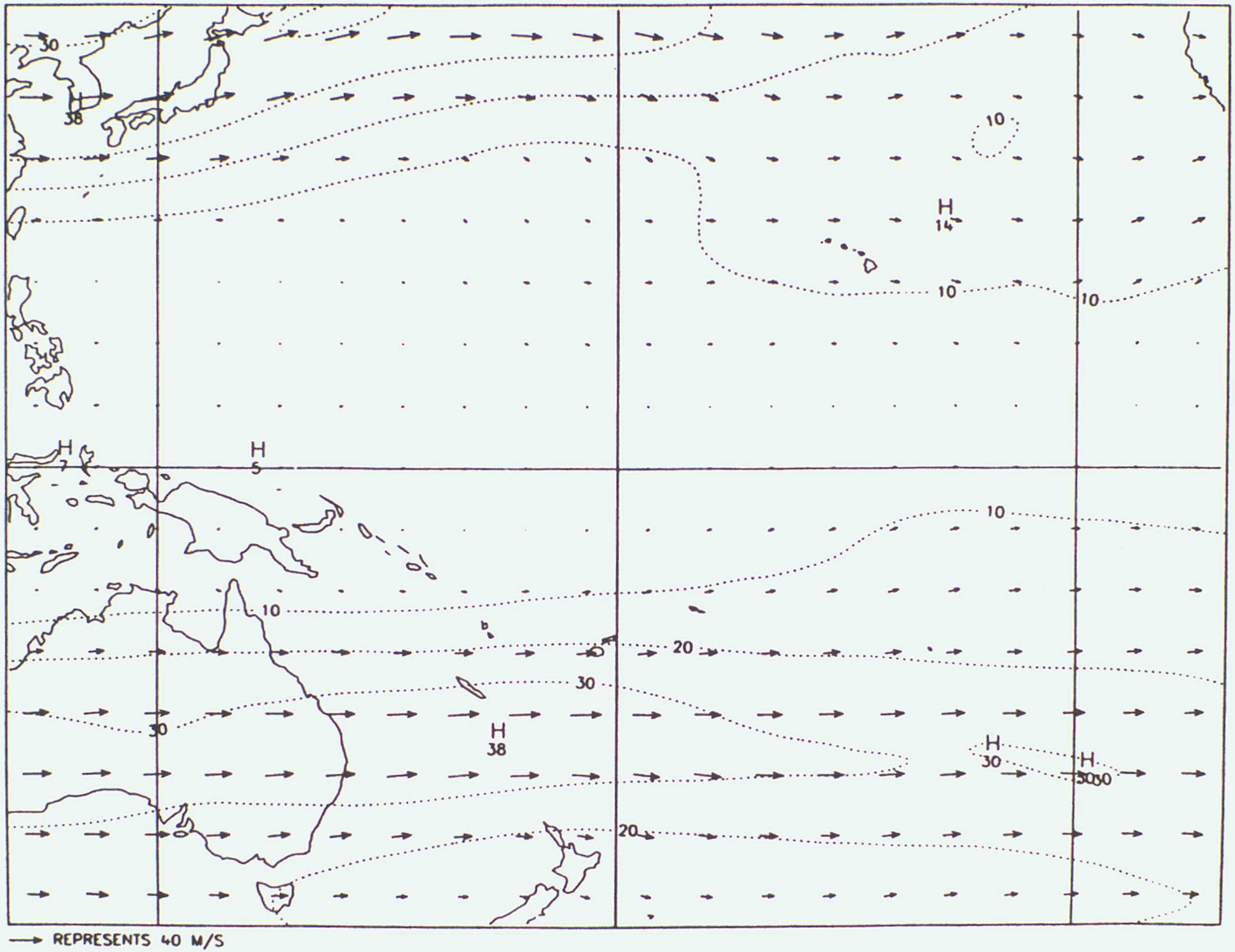
OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
850 MBS. BETWEEN LONGS. 120 W - 0 W


H 4
H 7
H 6
H 12
H 8
H 3
5
10
→ REPRESENTS 10 M/S

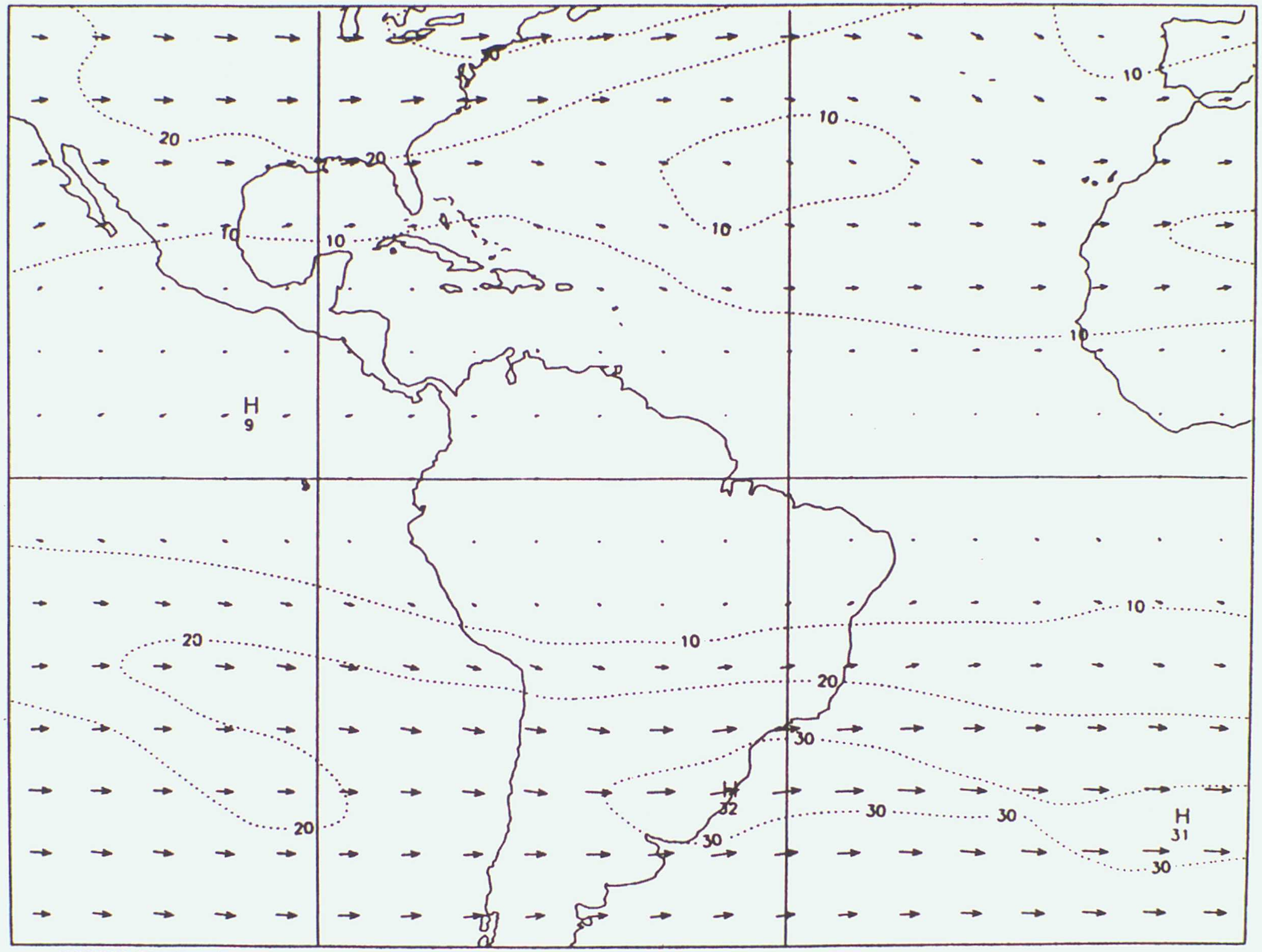
OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
250 MBS. BETWEEN LONGS. 0 E - 120 E


20
30
H
28
H
24
20
20
10
20
H
7
H
8
H
8
H
8
H
7
10
10
10
20
20
30
30
REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
250 MBS. BETWEEN LONGS. 120 E - 120 W


30
H
38
10
H
14
10
10
H
7
H
5
10
10
20
30
30
H
38
H
30
H
3030
20
→ REPRESENTS 40 M/S

OPERATIONAL ARCHIVE MEANS. SEP/OCT/NOV1989
WIND ARROWS AND ISOTACHS BETWEEN LATS. 45 N - 45 S.
AVERAGE FROM 0Z ON 1/9/1989 DAY 244 TO 12Z ON 30/11/1989 DAY 334
250 MBS. BETWEEN LONGS. 120 W - 0 W



→ REPRESENTS 40 M/S